ADOLESCENT INFORMATION SYSTEM

Latin American Center of Perinatology
and Human Development (CLAP)

Program for Adolescent Health
Family Health and Population (HPF)
Division of Health Promotion and Protection (HPP) PAHO/WHO

Panamerican Health Organization
World Health Organization

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ADOLESCENT INFORMATION SYSTEM

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The development of the Adolescent Information System is an enterprise which is shared by CLAP and the Program for Adolescent Health (Family Health and Population, HPF) of the Division of Health Promotion and Protection HPP of PAHO/WHO.

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Adolescence is a stage of development in the second decade of life characterized by rapid simultaneous changes: physical, cognitive, psychological, social and spiritual. During this time, growth and physical development are completed; and the capacity for reproduction is achieved. The young person may develop the capacity for abstract reasoning during the teenage years. Additionally, he or she may acquire independence from parents and other childhood caregivers. By the time adolescence is completed, an adult identity has been established. Social relationships evolve during adolescence; and the capacity for sexual intimacy is established. Entrance into adult life often requires economic independence which frequently is achieved through acquiring employment. During the teenage years, the adolescent rehearses a variety of social roles which may conflict with the norms and traditions of parents and other adults in the community; however, through the process, a new balance and an adult perspective is frequently achieved.

The diagnosis of health problems and illness during adolescence at times is not easy and frequently requires sufficient time as well as clinical competence and an understanding of adolescent development as well as the social context within which the adolescent lives. The health care of the young person must extend beyond physical health care services alone so as to help him or her to develop successfully and progress into adulthood. To serve in this important role, the clinician needs to understand not only the major causes of ill health during adolescence but must also have a knowledge of the normal stages of development as well as the resources available in the community which might assist the young person in achieving his or her potential. Because of the social as well as medical complexities, the duration of a clinical consultation may be longer than that needed for a young child for with the adolescent it is essential to meet not only the needs of the teenagers him or herself but, to be successful, the clinician must serve as a bridge between the adolescent and the family. The material enclosed in this manual is intended to provide an overview for the clinician interested in working with adolescents and to assist in understanding how best to carry out the clinical assessment so as to best provide the young person and his or her family the guidance they need.

The Adolescent Information System (SIA) comprises the adolescent history form, an application manual, additional forms and a computer-based system to facilitate local data processing.

The authors wish to express their gratitude to the many colleagues who have contributed ideas and suggestions; particularly to the Systems Analyst Raquel López, to Dr. Carlos Serrano, to Dr. João Yunes and to Dr. Elsa Moreno.

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1. INTRODUCTION

1.1 Objectives

The material contained within this manual has been compiled by CLAP in response to the identified need of clinicians and health professionals throughout Latin America to have an easily accessible system for collecting and interpreting adolescent data.

The goal of the Adolescent Information System is to improve the health and well-being of adolescents. Specific aims include:

- to strengthen the capacity for local data analysis ;

- to assist the clinical staff by highlighting areas of importance in adolescent health ;

- to provide institutions with an easy-to-use tool for research and

- to improve collaboration between CLAP and Health Institutions of the Region of the Americas.

The programs have been designed to be managed by individuals with the first level of computer literacy.

The Adolescent health History (AdH) forms are completed by clinic staff using interview. Once the clinical encounter has been completed, the staff enter the data into the computer so that a permanent computer-based record is immediately established. This rapid entry process assures that there is not an accumulation of unentered forms.

Using the Adolescents Information System (SIA), the health team can rapidly obtain statistics on the population being served. In addition, these computer programs are effective tools for self-evaluation as well as research.

1.2 Antecedents

The development of the Adolescent Information System by CLAP builds upon prior work that the Institute has done. Specifically, the Perinatal Information System (SIP) was developed by CLAP and involves: perinatal clinical record, perinatal card, and the necessary computer programs to compile and analyze perinatal data. This instrument is widely used throughout Latin America. The SIP is structured in modules and has as its goal the development of consistent health services to newborn children as well as the compilation of clinical data and the facilitation of statistical analyses. Similarly, CLAP has developed the Child Information System (SIN) to monitor growth and development through the age of 5 years.

1.3 Plan for the Adolescent Information System

Chapter 2 describes the general aspects of the SIA as well as its principal components: the adolescent history, the computer programs, organization and the statistical results that can be obtained.

Chapter 3 contains detailed instructions for completing the Adolescent History Form.

Chapter 4 contains instructions for completing the AdH follow-up form.

Chapter 5 describes the SIA computer programs including their installation into the computer and activities to assure quality control. This chapter also describes the daily tasks needed to maintain a reliable database.

Chapter 6 focuses on the statistical aspects of the SIA. It reviews the various documents which can be obtained on the aggregate group of adolescents whose data have been entered into the information system. The system's capacity includes not only basic descriptive data but more complex analyses like risk assessment and cross-tabulations.

Chapter 7 may help those using the Adolescent Information System to assist in completing the adolescent health history forms.

The appendix contains diagnoses, treatments, and reasons for consultation which can be coded for entry into the computer. Additional information contained in the appendix includes the variables for the adolescent history. Finally, there are growth curves to be used for reference so as to determine the weight and height centiles of the adolescent when no computer is available.

2. GENERAL CHARACTERISTICS

2.1 General Remarks

The adolescent history (Adh-Main and AdH-Follow-up) and the computer programs together constitute the Adolescent Information System.

The adolescent health history was designed to facilitate health care to young people between the ages of 10 and 20 years. It includes a "warning system" and has the capacity for all relevant adolescent health data to be entered into the computer directly.

2.2 The Adolescent History

Essential adolescent health information as well as appropriate follow-up has been condensed onto standard sized pages. These are proposed as the basic institutional register for adolescent health information. When additional history is needed, these forms can be expanded by using special records that may include, for example, perinatal clinical records (in the case of a pregnant female adolescent), reports for mental health, psychoeducational, social service, surgical specialties, x-rays or other laboratory reports.

The first two pages of the form (Figures 1a and 1b) are meant to record information, including: reason for the present visit (chief complaint), individuals accompanying the adolescent, past medical and social history, family history, family characteristics, housing, education, work history, social history, habits and behaviors, gynecologic/urologic history, sexual history, psychological and emotional history and the physical examination. The first two pages of the form conclude with general assessment and treatment plan.

The second form is specifically for follow-up visits of the adolescent (Figure 2a and 2b) as well as weight and height charts. After five follow-up visits, additional forms are included in the adolescent history as needed.

The forms contain primarily closed response questions which allow for uniform data collection across a diverse population. They also contain sections for open-ended responses, observations, assessment, treatment and referrals.

The first section of the main form allows for identification information so that registration data can be easily entered and retrieved. Additionally, this section allows for family information to be recorded so that family follow-up can be completed when necessary.

The subsequent section allows for information on the reason for the present visit to be entered. Here information should include not only the concerns expressed by the adolescent but those from accompanying individuals as well.

In the section on personal history, growth and development history should be entered as well as any relevant perinatal and infant information. When possible, child development landmarks should be recorded as well as an immunization history and any history of childhood diseases.

The family history should include information on both medical as well as social and emotional problems within the biologic family. If no information on the biologic family is available, that too should be recorded. The family section should also record data on the work and level of education of each parent or those who are the adolescent's primary caretakers. This section is critical for understanding the resources as well as the potential risk factors within the family.

The housing section includes information concerning general environmental conditions as well as the socioeconomic conditions within which the adolescent lives.

The sections on education, work, social life, habits, gynecologic and urologic history, sexual history, and psychological/emotional history identify those aspects in the life of the adolescent which may indicate problems or concerns.

The section for recording the physical examination allows the clinician to indicate any abnormal physical findings as well as key normal findings as well.

Finally, the sections on general diagnosis, treatment and referrals record the results of the evaluation, the adolescent health assessment, and the treatment plan to address the problems identified.

The follow-up visit form contains five sections that can be used to elaborate the history and course of the initial presenting illness or to record findings from subsequent visits. The primary purpose of the form, however, is to provide a summary of information on the growth and development of the teenager and to provide a mechanism for easily updating that information together with new physical and psychosocial conditions. This form also provides a registry to monitor the frequency of contacts the adolescent has with the health care team.

The follow-up form also contains height and weight curves which are important to plot so as to be able to monitor the adolescent's growth and development throughout the teenage years. By plotting height and weight for age, these graphs allow the clinician to identify whether the adolescent's linear height and weight gain is age-appropriate. Detailed curves are available in the appendix and can be referred to as needed. In addition, the computer program allows for the generation of height and weight curves based on the entire population of adolescents seen. For such figures to be useful, however, a large number of adolescents is required so that community norms can be established. If that is not done, the graphs that are generated will not reflect the distribution of the entire community but rather only those who have been seen in the clinic setting.

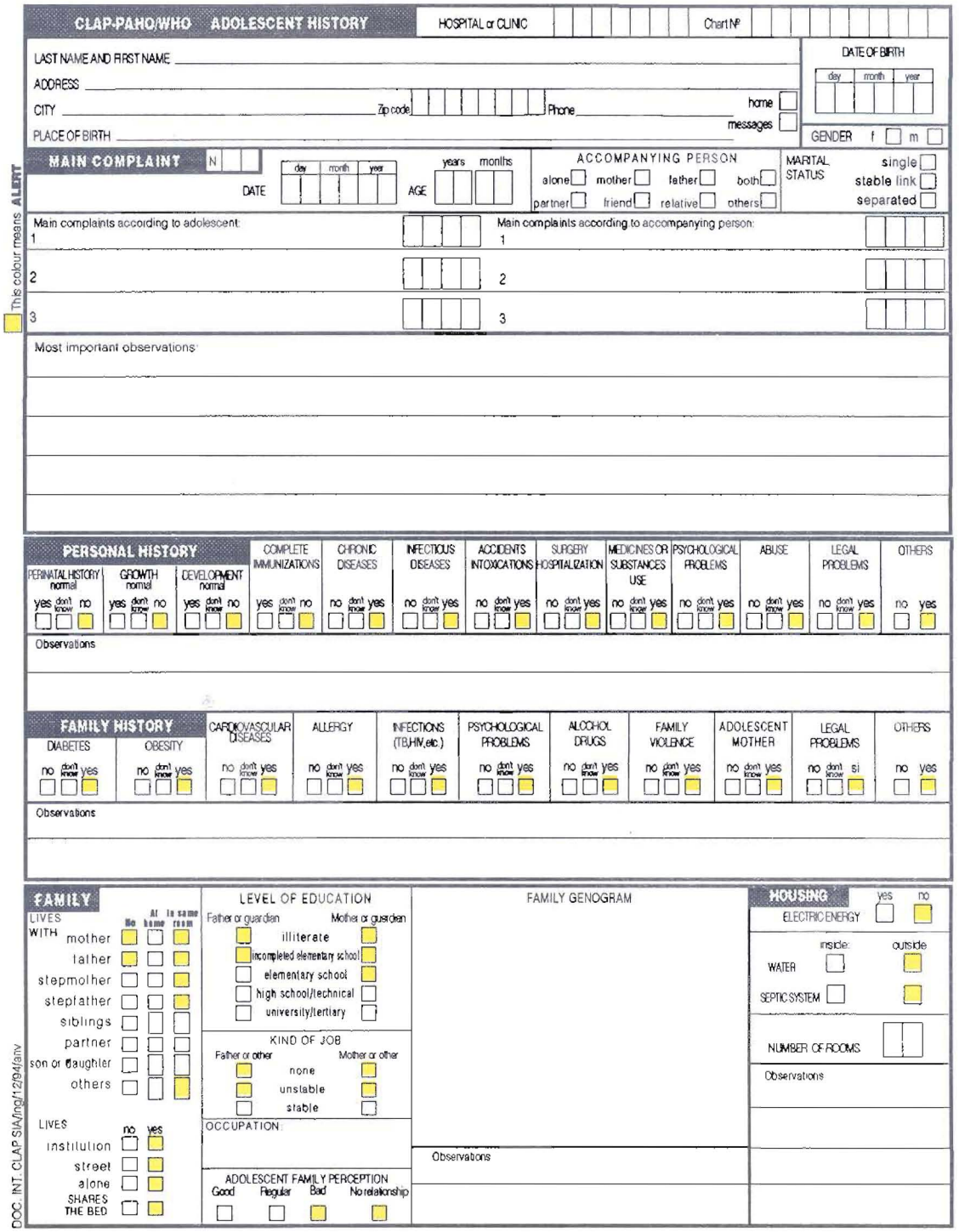

Figure 1a - Front page of the Adolescent History Form, Main (AdH-main). This form contains invariant data on the Adolescent (ADGFENER.DBF data base) as well as data collected during an extended visit (ADPRINC.DBF data base).

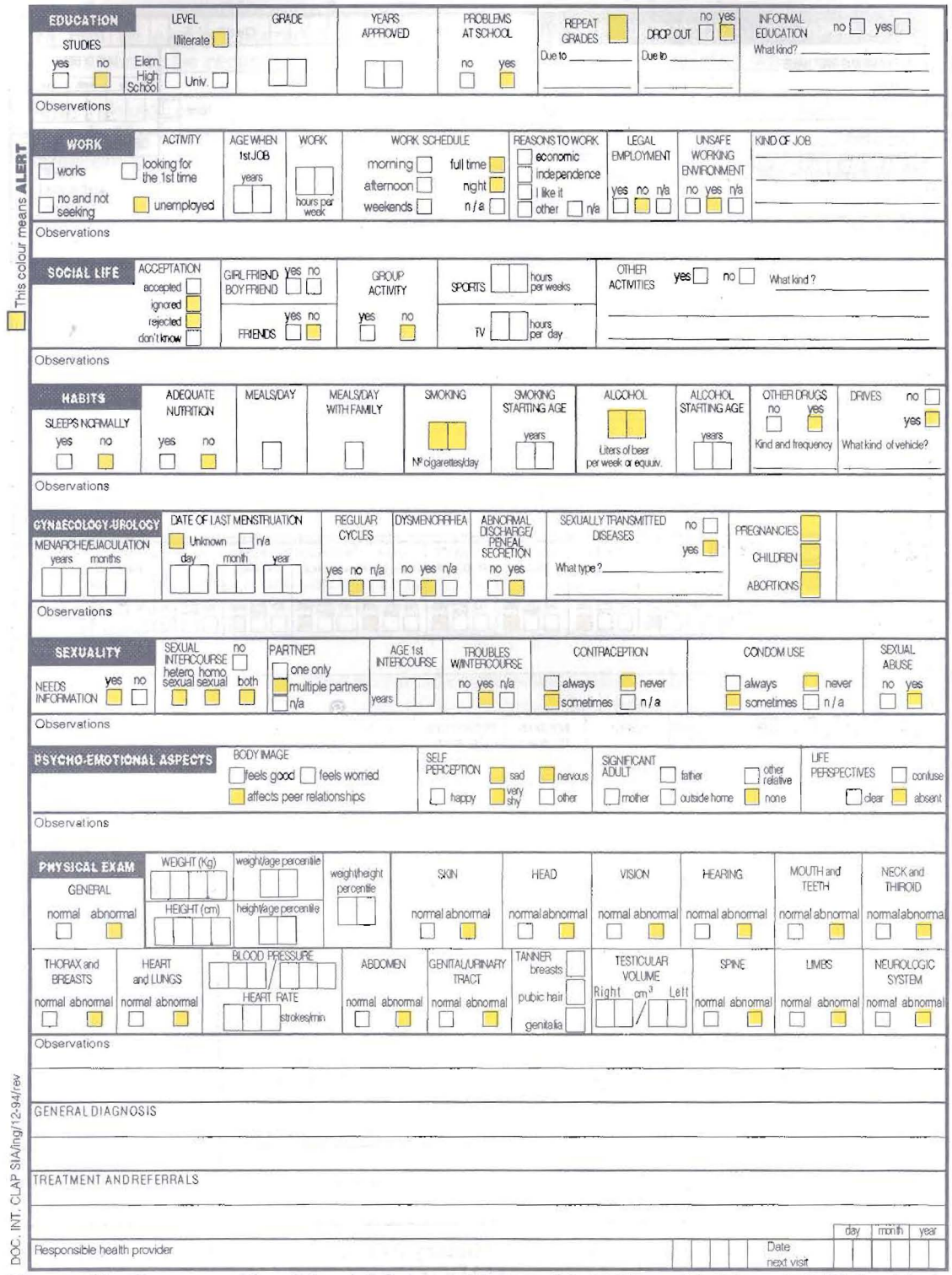

Figure 1b - Reverse side of the Adolescent History Main Form (AdH-main). This side is also colpleted during an extended visit. When a yellow box is filled, an "at risk" situation may have been detected.

CLAP-PAHO/WHO ADOLESCENT HISTORY - FOLLOW UP | HOSPITAL OR CLINIC | Chart N

FOLLOW UP Nº | DATE (day / month / year) | AGE (years / months) | ACCOMPANYING PERSON: alone ☐ mother ☐ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☐ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: ☐ don't know ☐ n/a (day / month / year)

WEIGHT (Kg) | Weight/age percentile | HEIGHT (cm) | Height/age Percentile | Weight/height Percentile | BLOOD PRESSURE mm Hg | HEART RATE (strokes/min) | TANNER: breasts / pubic hair / genitalia | TESTICULAR VOLUME: Right / cm³ / Left

Main complaints according to adolescent:		Main complaints according to accompanying person:	
1		1	
2		2	
3		3	

IMPORTANT CHANGES/OBSERVATIONS

GENERAL DIAGNOSIS

TREATMENT AND REFERRALS

Responsible health provider | Date next visit (day / month / year)

FOLLOW UP Nº | DATE (day / month / year) | AGE (years / months) | ACCOMPANYING PERSON: alone ☐ mother ☐ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☐ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: ☐ don't know ☐ n/a (day / month / year)

WEIGHT (Kg) | Weight/age percentile | HEIGHT (cm) | Height/age Percentile | Weight/height Percentile | BLOOD PRESSURE mm Hg | HEART RATE (strokes/min) | TANNER: breasts / pubic hair / genitalia | TESTICULAR VOLUME: Right / cm³ / Left

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IMPORTANT CHANGES/OBSERVATIONS

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Main complaints according to adolescent:		Main complaints according to accompanying person:	
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2		2	
3		3	

IMPORTANT CHANGES/OBSERVATIONS

GENERAL DIAGNOSIS

TREATMENT AND REFERRALS

Responsible health provider | Date next visit (day / month / year)

DOC. INT. CLAP SIA/fing/13-94/anv

Figure 2a - Front page of the Adolescent History Follow-Up Form (Adh-follow-up). Up to three follow up visits can be recorded here and two visits on the back of the same form.

CLAP-PAHO/WHO ADOLESCENT HISTORY - FOLLOW UP | HOSPITAL OR CLINIC | Chart N

FOLLOW UP Nº | DATE (day / month / year) | AGE (years / months) | ACCOMPANYING PERSON: alone ☐ mother ☐ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☐ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: ☐ don't know ☐ n/a (day / month / year)

WEIGHT (Kg) Weight/age percentile | HEIGHT (cm) Height/age Percentile | Weight/height Percentile | BLOOD PRESSURE mmHg | HEART RATE strokes/min | TANNER breasts pubic hair genitalia | TESTICULAR VOLUME Right / Left cm³

Main complaints according to adolescent:		Main complaints according to accompanying person:	
1		1	
2		2	
3		3	

IMPORTANT CHANGES/OBSERVATIONS

GENERAL DIAGNOSIS

TREATMENT AND REFERRALS

Responsible health provider | Date next visit (day / month / year)

FOLLOW UP Nº | DATE (day / month / year) | AGE (years / months) | ACCOMPANYING PERSON: alone ☐ mother ☐ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☐ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: ☐ don't know ☐ n/a (day / month / year)

WEIGHT (Kg) Weight/age percentile | HEIGHT (cm) Height/age Percentile | Weight/height Percentile | BLOOD PRESSURE mmHg | HEART RATE strokes/min | TANNER breasts pubic hair genitalia | TESTICULAR VOLUME Right / Left cm³

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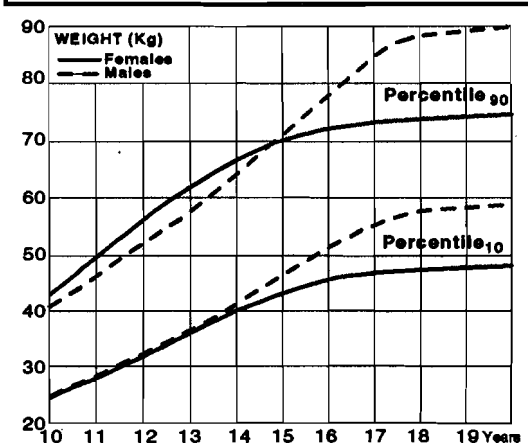
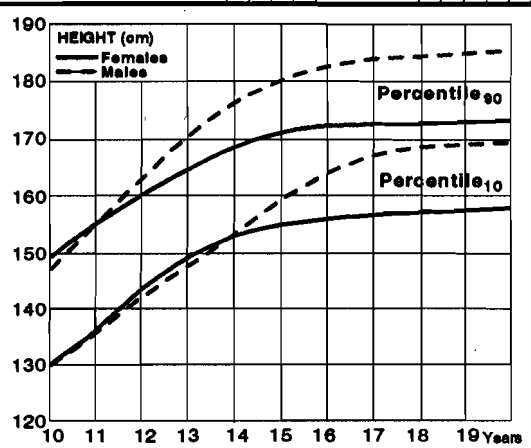
IMPORTANT CHANGES/OBSERVATIONS

GENERAL DIAGNOSIS

TREATMENT AND REFERRALS

Responsible health provider | Date next visit (day / month / year)





DOC. INT. CLAP SIA/mg/13-94/rev

Graphs are from PAHO "Adolescent Medicine Manual" PALTEX series Nº 20, Washington, D.C., USA, 1992. Extended to 20 years of age.

Figure 2b - Reverse side of the Adolescent History Follow-Up Form (Adh-follow-up). Please graph weight and height data of the Adolescent througout his or her teenage years and compare them with the 10th and 90th centiles.

2.3 Warning System

As the user will note, some of the boxes are colored yellow. The reason for this is to highlight certain risk factors or situations which, if present, may predispose the young person to problems. The presence of any of these risk factors requires the clinician to probe further so as to identify the extent of the problem and the need for treatment, follow-up, or referral.

2.4 Data Processing

Data processing allows for information to be maintained both on the individual as well as on the population level. Of course, for the data information system to be most useful, data must be current for it to be accurate. It is strongly recommended that they be processed on a daily basis at the conclusion of the clinic session. This will assure that data are current and accurate. Where it is impossible to process the data within the clinic site, a second option would be to send the forms to a central processing site where a computer is available and where the data can be entered and maintained for a variety of adolescent health-serving agencies and clinics.

2.5 Computing Equipment

The software for the SIA requires the availability of a personal computer (PC) and it must have a D.O.S. operating system Version 3.3 or higher.

In addition, a printer will be needed to assure the production of necessary figures, graphs and data tables. In addition to the computer, printer and operating software, the only other materials needed include: paper, ink cartridges and a sufficient number of diskettes.

If a computer network is available, the programs can be run simultaneously from different terminals on the same data bases.

2.6 The Collection of Data

The following procedures are recommended to entering and verifying the quality of the data:

1. All data should be entered on the same day as the adolescent was seen.
2. Once all data for the clinic session has been entered, run "detection of inconsistencies" for the histories which have been entered. If inconsistencies or warnings are noted, correct the information entered and try to obtain the missing information. Print the "summaries of history" of the adolescents who have been seen at the clinic session and include them in the patient's charts to be filed.
3. After all data have been entered and corrected, back up all data on a diskette. It is good practice to alternate backup diskettes such that, on day one, diskette "a" is used, and on day two, diskette "b" is used, returning to diskette "a" on the third day, etc.
4. To detect those adolescent that have not been seen for a while, check on when they are due next at clinic by the variable "date of next visit."
5. On a monthly basis, run the "completeness control and basic statistics" which will provide local statistical data of patients who have been seen. Additional information can be obtained based on the needs and interests of the clinic staff.

In order to assure quality control in the completion of the adolescent health history forms as well as the quality of data being entered into the information system, it is recommended that a working group be established (the clinical history revision committee). This group may wish to review adolescent health history forms prior to their being entered into the computer and then subsequently filed with the patient's chart.

If missing data is identified and, most especially, if the missing data are those elements of the instrument that are capitalized (e.g., weight, height, age), then the committee would follow-up with the individual who obtained the history to assure that missing information is obtained. This working group or committee should also have the responsibility for analyzing the "completeness control" as well as the "detection of inconsistencies" to verify the quality of the information being collected and entered.

If problems are noted, the committee will convene a meeting of appropriate health staff to emphasize the need for obtaining consistently accurate information if local data are to be useful.

If data from various sites are entered in a single location, the staff who have responsibility for operating the SIA must understand not only computer-based data entry, it must also have a working knowledge of statistics, epidemiology and health planning so as to be able to assist those sites dependent on it for local adolescent health data.

In summary, when data are collected and entered at the individual clinical or agency level, additional staff will generally not be required. What will be necessary, however, is that care will need to be taken to assure that all necessary data are obtained and that missing data are filled in once they have been identified. To achieve such a level of quality of control will usually require a working group or committee that has oversight responsibility.

The entire process is greatly facilitated through the use of consistent forms and computers.

2.7 Statistical Programs

The options for statistical analyses on the SIA are menu-driven. By moving the cursor, the operator is able to call up specific programs such as the "completeness control" or the "basic statistics" programs. The various programs available address a range of issues from the administration of health information to risk factor analyses. The menu available for the SIA statistical programs is shown in Figure 3.

All statistical programs have explanatory screens to guide the operator. Additionally, the F1 key provides additional information on the operation of the system in general.

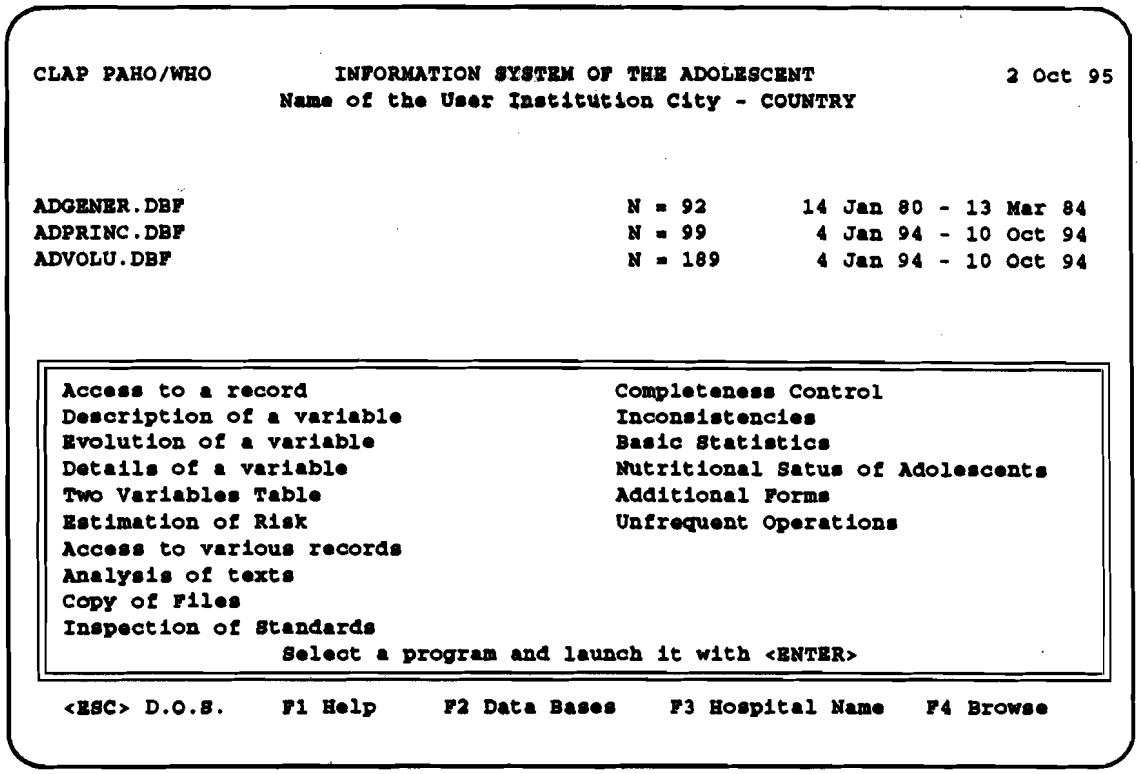


Figure 3 - Menu Screen of the SIA software. From this menu the operator chooses a single program such as ACCESS TO A RECORD to enter the data found in the AdH forms.

Data can be easily identified by specifying up the name of the institution. Specifically, institution identification data are maintained in the CENTER.DAA file and can be entered as a line containing up to 70 characters. Thus, the CENTER.DAA file could read: "name of user institution-city-country." A specific example is how the diskettes delivered by CLAP are coded:

Latin American Center for Perinatology CLAP PAHO/WHO

The SIA programs may be obtained by any health institution in Latin America by requesting them through the National Health Authority or representatives of PAHO/WHO.

2.8 Compatibility with EPI INFO

The SIA has the capacity of using EPI INFO to analyze data. EPI INFO is a statistical package developed by the Centers for Disease Control (CDC), a collaborating center of the World Health Organization located in Atlanta, Georgia, USA. The use of EPI INFO requires specialized training which is the responsibility of the user to obtain. Such special training is not necessary for using the SIA.

In the "menu of infrequent operations" (see Figure 20), there is the option of translating database information from the SIA to the EPI INFO format. The files generated by SIA with the EPIINFO format contain variables in the language available (Spanish, English or Portuguese) as well as their limiting values allowing the EPI programs to operate. It is also possible to work directory with EPIINFO on the SIA files (ADGENER.DBF, ADPRINC.DBF and ADVOLU.DBF) but then the variables assume generic names (var001, var002, etc.) and, thus, one loses the specific narrative information available on the SIA variables (e.g., name in English, type date, text, or number, etc.).

Before converting the SIA data files to EPI INFO, we encourage the user to explore all possibilities of statistical analyses using the SIA programs available for they have been established to allow for easy data analysis.

3. COMPLETING THE AdH MAIN FORM

3.1 General Remarks

The main form of the adolescent health history must be completed with the initial visit of the adolescent. This should occur independent of whether the visit is undertaken in health clinic, in a school setting, in a social service agency, or any other appropriate outpatient or inpatient setting where the health form is used. The only exception is for emergency services; and the adolescent health form is not appropriate in such settings. It takes approximately 45 minutes to complete the entire adolescent health history form correctly.

The clinical record stresses the acquisition of information related to the adolescent's achievements and lifestyle as well as health problems and concerns. It is a confidential document which must be collected and maintained in confidentiality. Information on the form should be completed by the nurse as well as the physician who sees the adolescent. In clinics where there is a more interdisciplinary team, all members of the team should complete various aspects of the form.

To obtain optimal information from a teenager, it is critically important for the clinician to establish an atmosphere of trust and confidentiality. Sufficient time must be allowed for the adolescent's response to the questions asked. Throughout the form, many items are marked by a cross in square boxes. Still others are noted with Arabic numbers in rectangular boxes. Additionally, there are sections with blank spaces in which to note qualitative data including perceptions of the adolescent on him or herself and on relations with other people.

It is recommended that the clinical record *not* be completed in one session. The reason for this recommendation is that establishing a working relationship with the adolescent is essential if reliable information is to be obtained. It is fully appropriate, when necessary, to schedule a return visit to allow for the comprehensive history to be completed.

Such detailed information need not be obtained on every visit; however, if a substantial amount of time has passed since a previous visit or if there have been major changes in social, emotional, or physical health, then it is justifiable to complete a new comprehensive form when the adolescent returns to clinic. In such cases, the original clinic number should be retained for easy tracking. In general, we recommend it will be necessary to establish a new AdH Main Form at least every two years due to the high likelihood of significant life changes for the adolescent.

The main form contains the following sections: identification information, chief complaint, past medical history, family medical history, family social history, housing, educational history, employment history, social history, habits and behaviors, gynecologic and urologic histories, sexual and reproductive health histories, psychological and emotional history, physical diagnosis, assessment, treatment and referral plan.

3.2 Identification Information

Data in the identification information section allows for tracking and location of adolescent patients and easy retrieval of health history information. It is critical for both given and surnames to be clearly written in the space provided. Any alteration can make it difficult to locate the history as needed.

Institution: Write the code in the space provided which identifies the institution or clinic where services are being provided. This space allows for up to 7 digits to be entered. Completion of this section allows for easy tracking to the specific institution where services were delivered if data are aggregated on a regional or national basis.

Clinical record number (C.R. Nº.): The clinical record number is a unique identifier assigned to each adolescent in the institution where services are delivered. As with the institution code, this identifier allows for up to 10 digits to be entered. Were there to be a clinical record at the institution when the adolescent history is completed, the clinical record number already being used should be entered into the space provided.

Given and surname: In the space provided, complete both the given and surname or names for the adolescent under which he or she was registered at birth. As with the other information, it is important to write clearly.

Address: The usual or primary residence of the adolescent is to be entered into this space. Write the street name, house number, and neighborhood. If it is not possible to identify the exact address with that information alone, write any other reference information that might allow for location to be determined (e.g., 10 miles after Such Grossing on Route 8).

City: Enter the name of the village, town, or city of the address. Geographic, postal code or Zip code may be placed next to the address if one is available. This space allows for up to 7 digits to be entered.

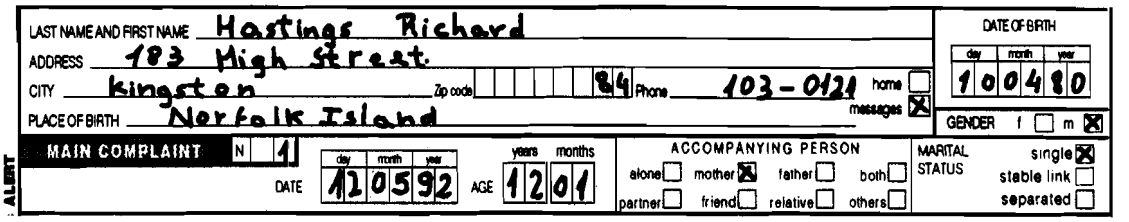
Telephone: In this space, enter the home telephone number. If no phone is available, try to identify a phone number where the adolescent can be reached whether it is through a relative, neighbor, or friend. Next to the space available for the telephone number, please indicate the phone's location if it is other than at the adolescent's home.

Birthplace: Enter the name of the village, town, or city where the adolescent was born.

Date of birth: Enter the day, month, and the last two digits of the year of birth. So, for example, if the adolescent's birth date was 27 July, 1980, the date entered should be 27/07/80.

Gender: Enter gender of male or female. In the rare instance of chromosomal abnormalities, enter the sex with which the individual identifies.

An example of the completed identification section is as follows:



3.3 Chief Complaint

Chief complaint number: Number the HdA Main Forms of a given adolescent from one ("1") on.

Date: Write in the day, month, and the last two digits of the year corresponding to the date of the clinic visit. Numbers must be recorded in two digits so, for example, October 7, 1994 should be 07/10/94.

Accompanying person: In the corresponding box, note whether the adolescent is alone or is accompanied by another person: mother, father, both, a partner, a friend, a relative, or other. Mark only one alternative. If further elaboration is necessary, please do so under the section for observation.

Marital status: Place an "x" in the appropriate box according to the marital status of the adolescent at the time of his or her visit indicating: single, stable union, or separated. The "stable union" option includes, but is not limited to marriage.

Chief complaint according to the adolescent: Note in the space provided the problems and concerns expressed by the adolescent at the start of the clinic visit. To the extent possible, use his or her exact words and note the three primary problems. If there are more than three, additional information can be recorded in the observations section. You will note that, at the end of each line for the chief complaint, there are boxes allowing for code numbers to be assigned to the health concerns.

The Appendix includes a list of the most frequent health concerns of adolescents. If your institution is interested in processing the data, it is important to enter the classification number for the chief complaint. So, for example, for the general presenting complaint of "pain," the code is 0400; however, if the primary concern was reported to be pericardial pain, then the code is 0406.

Perceptions of the health problem according to the accompanying person: Note the problems expressed by the accompanying person; and as was done with the adolescent, indicate the three most pressing issues. Frequently, these concerns will correspond with those reported by the young person; however, that is not always the case. As was done with the adolescent, note the appropriate code for the accompanying person's concerns from the information provided in the appendix. Each code has a number of up to four digits. As was the case with the adolescent, the first two digits correspond to a general classification while the second two digits are more specific. So, for example, digestive problems is coded 1900; however, vomiting is coded 1902.

Observations: In the space provided, note the progression of the history of present illness indicating symptoms, timing of various problems, and associated physical and emotional complications. What advice or treatments have been undertaken and what has been the response to them? What has been both the individual's and family's response to present health problems? Additionally, in this space, record data obtained in the medical history that may or may not relate to the primary health concern.

The following is a general guideline in obtaining an adolescent medical history:

General aspects: appetite; weight gain or loss; concerns about height or weight; concerns about body image and appearance; history of fever, fatigue, depression, pain, allergies.

Skin & allergies: acne, scars from trauma, allergies.

Eyes: changes in vision, use of glasses.

Nose: chronic rhinitis, seasonal allergies and hay fever, chronic nasal stuffiness.

Ears: changes in hearing, recurrent ear infections, history of ear surgeries.

Mouth & throat: recurrent pharangitis, recurrent sores.

Teeth: pain, caries, loss of teeth, most recent dental visit.

Heart & lungs: cough, dizziness, syncope, palpitations, chest pain, wheezing, hypertension.

Gastrointestinal: diarrhea, constipation, abdominal pain, use of laxatives.

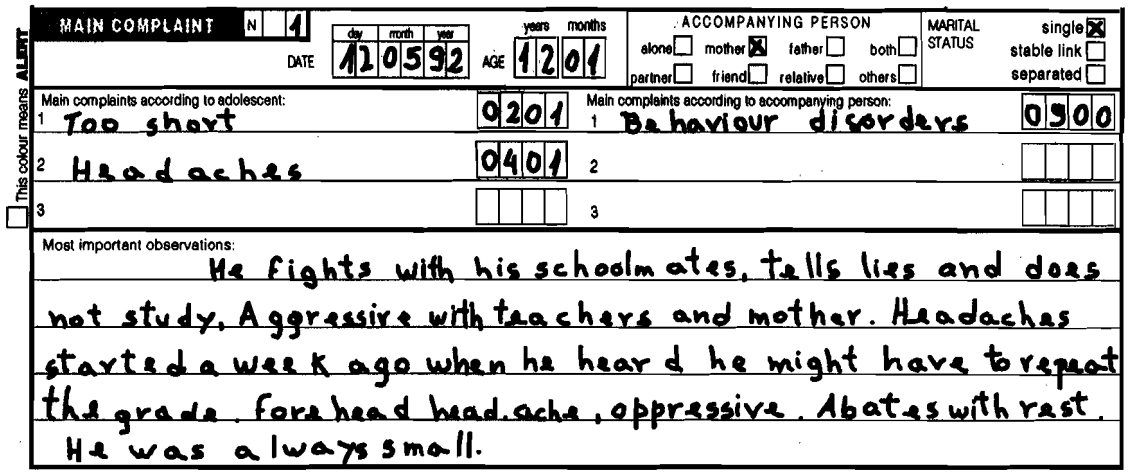
Genital-urinary: dysuria, enuresis, genital itching, dysamenorrhea, dyspareunia.

Extremities: pain, limitations in range of motion, gait disturbances, problems ambulating.

Nervous system: dizziness, syncope, seizure disorders, learning and school problems, conduct disorders, suicide attempts, depression.

In addition to the above, it is important to find out if the adolescent is currently on any medications and, if so, specify type, frequency, and dosage. If not, but if he or she has been on medications in the recent past, please indicate what they are and for what reason.

An example of how to complete the chief complaint section is as follows:



3.4 Personal history

Some of the sections that follow are completed with the data provided by the adolescent or the accompanying person during the interview. After each section, there is a space provided for *observations*. That space is available for elaborating issues and problems noted in the corresponding section. It is important to elaborate the impact of *the problem socially and emotionally* on the adolescent as well as his or her family.

The *personal history* records events throughout the adolescent's life which may influence his or her present situation. In addition to identifying risk factors, it is necessary to identify protective factors as well. They will be important in developing appropriate interventions.

When the adolescent is asked personal questions about behaviors, it is important that privacy is assured as well as confidentiality. Such assurances will help to create a climate of confidence in the clinician. The adolescent should always be given the option not to respond and, thus, there is an "I don't know" category for those situations when the adolescent cannot answer or is not willing to do so. For information that is critical for which the adolescent truly does not know, then it is important to try to determine that information from family members.

Perinatal conditions: This section addresses the conditions surrounding pregnancy and birth including not only the medical factors but the social and emotional ones as well. It is optimal to ask an accompanying parent about these issues if one is present. If the adolescent is alone and is unable to complete the

questions in this section, mark the option, "I don't know," and ask the young person to speak with his or her parents so as to determine the appropriate responses and record them at a later date.

Growth: This refers to increase in body mass generally measured by weight and height. If abnormalities are noted, please elaborate under "observations."

Development: This section refers to differentiation in four domains: motor, coordination, social, and language. If problems have been noted at any time throughout childhood or adolescence, they should be described in the "observations" section. As for other sections, if neither the adolescent nor accompanying individuals have any relevant information, the "I don't know" option should be selected and the young person should be asked to speak with his or her parents for more information.

Vaccinations: Ask in detail whether vaccinations have been completed and whether they are "up-to-date" according to national immunizations standards. If immunizations are not current, mark "no" in the box provided and specify what immunizations are outstanding under the "observations" section. If the adolescent does not bring the vaccination card at the time of the visit, mark the option, "I don't know," and ask for the young person to return with the card at a subsequent visit. When immunizations are supposed to be administered during adolescence, please note whether they have been carried out.

Chronic diseases: Chronic diseases are defined as those conditions lasting for a minimum of three months. Indicate any organic or emotional conditions that have an impact on functioning. In this section, all chronic conditions and disabilities except mental disturbances are to be recorded. Emotional health problems will be reported under the section under psychological problems. Should any chronic conditions exist, the specifics should be described in the observations section.

Infectious/contagious conditions: This section should record all infectious conditions of significance, including sexually transmitted diseases as well as childhood infectious diseases. As always, conditions requiring further elaboration should be specified under *"observations."*

Accidents/poisoning: Unintentional injury or poisoning at any time in the adolescent's life should be recorded. In the *"observations"* section, information should be elaborated, including recording the consequences of the injury and whether permanent harm has resulted. Again, if neither the adolescent nor accompanying individuals have information to report, the "I don't know" box should be recorded temporarily until temporary information can be obtained.

Psychological problems: Psychological and emotional problems associated with an impact on functioning should be recorded. Certainly, depression, suicide attempts, self-injurious behavior, or aggressive behaviors that resulted in harming others should be recorded. When obtaining an emotional history, it is important to ask clear and direct questions (e.g., Have you ever wished or tried to take your own life?).

Abuse: It is important to directly ask whether the young person has ever sustained any physical abuse that has been inflicted by a relative, another known adult, or a stranger. Additionally, questions should be asked regarding neglect which is defined as willfully leaving the young person without protection, food, or clothing. Sexual abuse should not be recorded in this section but rather in the section under sexual history.

Legal problems: This section refers to encounters with the law resulting in arrest, fines, or incarceration during adolescence or childhood. If affirmative, please provide details under *"observations."*

Other: If the person completing the clinical record feels that there are other data which have not been asked and which are important, mark "yes" and elaborate the details under "observations."

Example of completing the section for "personal history":

PERSONAL HISTORY: PERINATAL HISTORY normal	GROWTH normal	DEVELOPMENT normal	COMPLETE IMMUNIZATIONS	CHRONIC DISEASES	INFECTIOUS DISEASES	ACCIDENTS INTOXICATIONS	SURGERY HOSPITALIZATION	MEDICINES OR SUBSTANCES USE	PSYCHOLOGICAL PROBLEMS	ABUSE	LEGAL PROBLEMS	OTHERS
yes ☐ don't know ☐ no ☒	yes ☐ don't know ☐ no ☒	yes ☐ don't know ☐ no ☒	yes ☒ don't know ☐ no ☐	no ☒ don't know ☐ yes ☐	no ☐ don't know ☐ yes ☒	no ☒ don't know ☐ yes ☐	no ☒ don't know ☐ yes ☐	no ☒ don't know ☐ yes ☐	no ☐ don't know ☐ yes ☒	no ☐ don't know ☐ yes ☒	no ☒ don't know ☐ yes ☐	no ☐ yes ☒

Observations
Breach delivery. Birthweight 2.900 Kg. Chickenpox. Always rest less. distracted, aggressive. Between 5+8 yrs lived with pat. grand mother.

3.5 Family History

This section can be completed based on information from either the adolescent or the accompanying person. If information is not available, mark "don't know" and ask the adolescent to obtain the missing data. Family history focuses on illnesses as well as social functioning of the family, including: diabetes, cardiovascular diseases, obesity, mental illness, infectious illnesses (including tuberculosis and HIV infection), alcohol and other drug abuse, family violence, history of early [adolescent] childbirth, as well as any other information the clinician may think is pertinent based on the chief complaint in such cases. When additional information is needed, it should be recorded in the space provided for observations.

Example of completing the section for "family history":

FAMILY HISTORY: DIABETES	OBESITY	CARDIOVASCULAR DISEASES	ALLERGY	INFECTIONS (TB,HIV,etc.)	PSYCHOLOGICAL PROBLEMS	ALCOHOL DRUGS	FAMILY VIOLENCE	ADOLESCENT MOTHER	LEGAL PROBLEMS	OTHERS
no ☒ don't know ☐ yes ☐	no ☐ don't know ☐ yes ☒	no ☒ don't know ☐ yes ☐	no ☒ don't know ☐ yes ☐	no ☒ don't know ☐ yes ☐	no ☐ don't know ☐ yes ☒	no ☐ don't know ☐ yes ☒	no ☐ don't know ☐ yes ☒	no ☒ don't know ☐ yes ☐	no ☒ don't know ☐ si ☐	no ☐ yes ☒

Observations
Father pat. grandmother obese Both violent. Father alcoholic. Height of father: 1.62 m. Height of mother 1.49 m.

3.6 Family

The family section can be completed by either interviewing the adolescent or the accompanying person. When there is disagreement between the two reports, the adolescent data should be recorded.

The first question records with whom the adolescent lives. Mark with an "x" the corresponding box according to whether he lives "at home" or "in the room" with mother, father, stepmother, stepfather, siblings, the adolescent's partner, his or her own children, or persons other than the biologic family. You will note that the boxes for siblings, children, and others are larger; this is to allow the recorder to note numerically the number of people who live with the adolescent. Another option is that the adolescent "does not live" with his or her family. In such cases, mark an "x" in the box "no" under "lives with" and mark whether the young person lives "in an institution, " "on the street," "alone"; and note under "observations" the details of the living arrangement. If the adolescent shares a bed with another individual, mark the corresponding box and provide further information in the observations section.

Level of education of parents: Indicate the highest level of education achieved by both mother and father. If the adolescent does not know that information, mark "don't know" and ask the young person to follow up with his or her parents.

Mark with an "x" the corresponding box according to the educational level of each parent: "illiterate" if parent can neither read nor write, "elementary school not completed," "completed elementary school," "completed high school," "post-secondary school/university education." Check "high school" if parent has completed an intermediate level, including technical studies. Mark only one choice for each parent. Select the highest level of education completed for each parent.

Parent Employment: This refers to the employment of father, mother, or guardians and the options are: "none," "stable" or "unstable." A "stable job" is one for which there is a work contract. It is a position that affords a certain degree of permanence. An "unstable job" refers to temporary employment, a day laborer, or one where there is no permanence. Select only one alternative for each parent.

Parent Occupation: Describe the occupation of father, mother, or guardian. In the space provided, note only the *current* position, trade or profession. If one's occupation is different from current employment, please note the discrepancy under observations.

Family Genogram: The family genogram depicts the family structure using a readily identifiable format. It denotes who lives with the adolescent. It must be drawn in the blank space provided; and should be completed by the interviewer.

The following signs have been chosen by convention: a square represents males and a circle represents females. Highlight the adolescent who is the subject of the clinical visit with a double line around the box or circle. If there is an active (current) relationship between two family members, the relationship should be

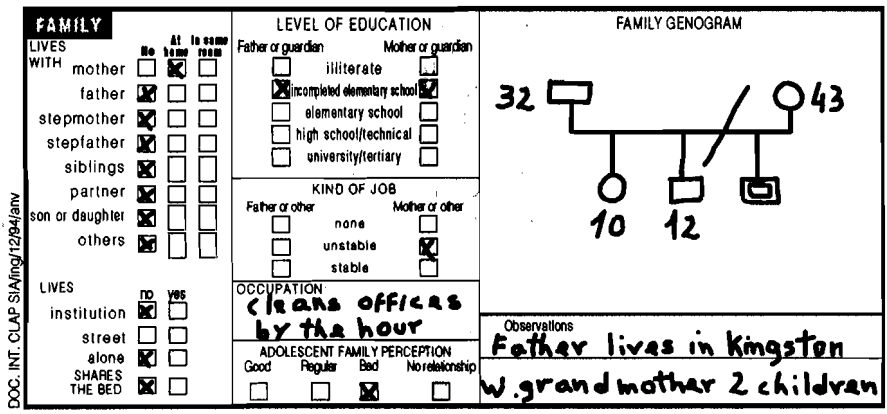
depicted by a solid line. A dashed line should be used if the relationship has ended (for example, through divorce or separation) and a dotted line should be used to indicate an engagement or consensual union where the two individuals in the relationship do not live together. Inside or next to each box or circle, note the age of the individual in years. If the person is deceased, shade the corresponding box or circle. Abortions should not be noted but can be narratively described under observations.

Adolescent Perceptions of the Family: This section reports the adolescent's perception of family linkages and functioning. The adolescent should be asked how he or she feels about relationships with his family. It is important for the respondent to consider the family as a single unit. The definition of the family should be determined by the group with whom the adolescent lives. It is important to record the adolescent's opinion in general and not based on a single incident.

Mark only one selection with an "x" according to whether the adolescent considers the family relationships to be: "good," "regular," or "bad." The option "no relationship" should be chosen in situations where family does not maintain any connection (as a consequence, for example, of physical or emotional distance) or when there is no individual or group the adolescent sees as the family. Any discrepancies between adolescent report and interviewer perception should be noted under observations.

To evaluate family functioning, it is important to assess the degree of family cohesion—the emotional links that hold the family together, their adaptability or capacity to change over time, as well as the power of relationships or influences which exist within the family. In addition, family cohesion is influenced by problem-solving capacity and active communication.

Example of completing the section for "family":



3.7 Housing

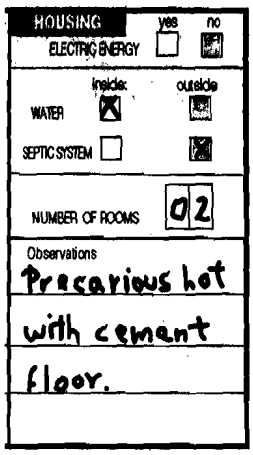
The section on housing together with those on work and parental education indicate the socioeconomic status of the family. Whether the dwelling has sanitation, drinking water, electricity, and refrigeration should be noted. It is optimal when there are not more than two people to a living space (e.g., bedrooms, dining room, or sitting room). In addition, an optimal dwelling would include a space where the adolescent could be alone were there a need or desire for privacy.

Electricity: Mark with an "x" the corresponding box indicating whether electricity is present.

Water & Septic System: If the dwelling unit has running water and a septic system, mark the box noted "inside"; otherwise, select the box marked "outside."

Number of Rooms: Write down the number of rooms, including bedrooms, dining rooms, and sitting rooms in the housing unit. Exclude both the kitchen and bathroom(s) in making such calculations.

Example of completing the section for "housing":



3.8 Education

A number of aspects related to education arise spontaneously, as do responses to sections such as work, social life and habits, if the interviewer asks the young person to describe a "typical" weekday and what a "typical" day during the weekend might look like.

Studies: Please note whether the adolescentis enrolled in some kind of formal training at the time of the visit.

Level of Studies: Please mark the highest level of education achieved by the adolescent up to the time of the present visit even if he or she has not completed the level selected or even if the individual is not currently in school.

Mark with an "x" according to whether the young person "has never been in school," has completed "elementary school," or has "high school" or "university" studies. If someone is receiving vocational training, that should be noted under "high school."

Grade or Course of Study: Please note in the space provided the adolescent's course of study at the time of the visit. Please select the convention for recording course level used most commonly in your country. For example, if an individual is in the 10th grade, enter a number 10 in the box provided. If the individual is in the third form, enter a 3 in the appropriate space. If the individual is not attending school at the time of the visit, enter 0 even if the adolescent has completed school previously.

Years Completed: In the space provided, indicate the total number of years of school completed as formal education. Do not include the present year, years repeated, nor preschool years.

School Problems: Indicate difficulties in school that result in academic difficulties including: conduct problems, attention difficulties, social or economic problems, work problems, difficulties in communicating or relating to classmates or teachers. Indicate with an "x" in the corresponding box whether the school-based problems are currently "being studied" and, in the observations section, please specify if the answer is yes. If, on the other hand, based on the evaluation, further psychoeducational evaluation is warranted, please so indicate under observations.

Grades Repeated: Please indicate the number of times the adolescent repeated various grades; and to the extent possible, please indicate what grades they were and what precipitated the class retention. If the young person was never "kept back," then a zero should be entered into that space.

Drop-Out: Mark with an "x" if the young person has discontinued his education and indicate, if possible, the cause for dropping out. If after discontinuing his schooling the young person subsequently returned, please so indicate under observations.

Informal Education: Note any subject or extracurricular course the young person may be taking (e.g., beautician, computing, languages, piano, etc.). Mark the corresponding box appropriately and indicate what course is or has been completed.

Example of completing the section for "education":

EDUCATION	LEVEL	GRADE	YEARS APPROVED	PROBLEMS AT SCHOOL	REPEAT GRADES	DROP OUT	INFORMAL EDUCATION
STUDIES yes ☒ no ☐	Illiterate ☐ Elem. ☒ High School ☐ Univ. ☐	6 5	0 5	no ☐ yes ☒	1 Due to conduct	no ☒ yes ☐ Due to	no ☒ yes ☐ What kind?

Observations: Repeated 4th Grade. Coincided with moving

3.9 Work

Work is defined as any activity, whether paid or not, carried out by the adolescent at the time of the visit. If the young person is working, mark the box "works." If not, there are three options:

a) If the adolescent is not looking for work and has not previously worked, then so indicate by marking "no and is not looking";

b) If the adolescent is not currently working but *is* looking for work for the first time; and

c) Unemployed: the adolescent has already worked and is wanting to work at the present time.

Select one of the three alternatives and mark the corresponding box.

Age of First Job: Indicate the age at which the young person held his or her first job independent of whether he or she is currently employed. If the individual has never worked, write zero.

Work Hours: Indicate with an "x" in the appropriate box whether the individual works in the "morning," "afternoon," "weekends," "full time," or "at night." If the individual does not work, mark the option "not applicable (n/a)." Select only one alternative.

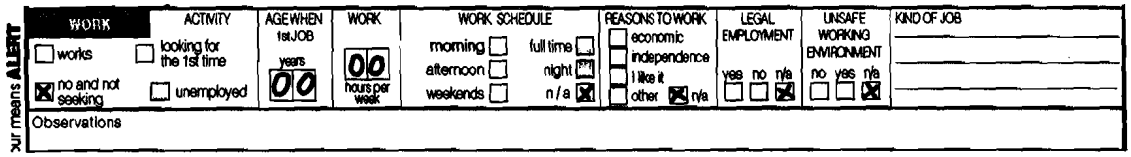
Reasons for Working: Indicate the reasons the adolescent gives for working. Select only the predominant reason the adolescent gives. If there is need to further expand, or if the interviewer has additional observations, they should be noted in the observations section. If the adolescent does not work, mark the box "not applicable (n/a)."

Legal Employment: Indicate whether the adolescent is employed by legal contract. If the individual is not employed at the present time, so indicate by marking "not applicable (n/a)."

Unsafe Work Environment: Indicate whether the physical or psychosocial health of the adolescent is at risk by the work he or she is doing. To the extent possible, use professional criteria and accepted legal standards and indicate the type of risk sustained under the observations section. Again, if the adolescent is not working at the time of the visit, mark in the box "not applicable (n/a)."

Job Type: If the adolescent is currently employed, describe the type of work and mention the profession or trade.

Example of completing the section for "work":



3.10 Social Life

This section explores relationships with other adolescents associated with use of free time.

Acceptance: This section explores social acceptance of the adolescent. Specifically, ask whether the young person feels that those around him "accept," "ignore," or "reject" him or her. Develop an overall assessment of social integration. If the young person is unable to answer the question, mark the option, "don't know." This section can be expanded in the observations section if needed.

Girlfriend/Boyfriend: Indicate in the appropriate box if the adolescent has a partner independent of whether it is a sexual partner.

Friends: Indicate in the space provided whether the young person feels he has a network of "real friends." Under observations, it is worth noting the number of friends the individual reports having.

Group Activity: This question refers to social activities with a group of adolescents outside of school or formal educational settings. Elaborations should be done in the observation section.

Sports (hours per week): Indicate the total number of hours of sports participation, including individual and team activities.

TV (hours per day): Indicate the average number of hours spent watching TV on a weekday.

Other Activities: Indicate any other activities of significance in which the adolescent may participate and specify the type of activity. For example, if playing computer games is a significant activity, then so indicate in this section.

Example of completing the section for "social life":

☐ This calc

SOCIAL LIFE

ACCEPTATION
accepted ☐
ignored ☐
rejected ☒
don't know ☐

GIRLFRIEND yes ☐ no ☐
BOYFRIEND

FRIENDS yes ☒ no ☐

GROUP ACTIVITY
yes ☒ no ☐

SPORTS 02 hours per weeks

TV 06 hours per day

OTHER ACTIVITIES yes ☒ no ☐ What kind?
Plays foot ball in the neighborhood.

Obaervations

3.11 Habits

This section focuses on various aspects of daily life and lifestyle of the adolescent.

Sleep: Normal sleep is when the adolescent sleeps through the night without waking and indicates that in the morning he or she wakes feeling rested.

Nutrition: Nutrition is adequate if the adolescent eats between four and six times a day at regular intervals according to community and family customs. It is adequate if the diet includes the recommended quantities of protein, carbohydrates, fats, minerals and vitamins.

Not only are quality and quantity of diet important, but social factors such as family meals, patterns of eating and problems associated with eating are relevant as well. Mark with an "x" any concerns and elaborate on them in the space provided under observations.

Meals Per Day: Indicate the number of meals the adolescent consumes on a weekday. One method of developing an accurate estimate is to ask the young person to recall meals eaten on the day prior to the visit.

Family Meals: Indicate the number of meals the adolescent eats with his or her family on an average day. If none, indicate zero.

Tobacco Use: Indicate the number of tobacco cigarettes the adolescent smokes daily. If he does not smoke at all, praise him for that and indicate zero in the appropriate box.

Smoking Initiation: If the adolescent does smoke, indicate the age at which cigarette smoking began. Even if the adolescent does not currently smoke but has in the past, age of initiation should be indicated here. If he or she has never smoked, indicate a zero.

Alcohol (Liters of Beer per Week): Indicate the quantity of alcohol the young person consumes in equivalency of liters of beer per week. This will require a calculation using the following conversion: beer equals 4% alcohol content, wine equals 12%, whiskey equals 40%. Thus, one liter of whiskey or spirits equals approximately 3.5 liters of wine or 10 liters of beer. If the young person does not drink alcohol, mark zero.

Drinking Age of Initiation: Indicate the age at which the young person first drank alcohol excluding use for religious or ceremonial purposes. As is true for other sensitive issues, questioning a young person on drinking behavior should be done in private. If the young person reports never having consumed alcohol, mark zero in the corresponding box.

Other Drugs: Indicate whether the adolescent uses any other drug, medicine, or substance not prescribed by a doctor. Indicate the type of drug, the frequency, and amount consumed. Provide the specifics of drug use in the observations section. If no drugs other than those medically prescribed are consumed, register "no" in the space provided.

Drives: Indicate whether the adolescent drives a vehicle and, if so, indicate the type of vehicle, including: automobile, bicycle, motorcycle, etc. If the young person operates such a vehicle, ask about security measures including helmet, drinking and driving, night driving, and acquisition of a driver's license. In the observations section, indicate any driving risks or previous driving violations.

Example of completing the section for "habits":

HABITS	ADEQUATE NUTRITION	MEALS/DAY	MEALS/DAY WITH FAMILY	SMOKING	SMOKING STARTING AGE	ALCOHOL	ALCOHOL STARTING AGE	OTHER DRUGS	DRIVES
SLEEPS NORMALLY yes ☒ no ☐	yes ☐ no ☒	3	2	Nº cigarettes/day	years 00	Liters of beer per week or equiv. 00	years 00	no ☒ yes ☐ Kind and frequency	no ☒ yes ☐ What kind of vehicle?
Observations Lunches alone. Breakfast · Supper w/mother. Low caloria intake									

3.12 Gynecological/Urological Aspects

This section should be completed for both males and female and is intended to report significant gynecological and urological problems the young person has had in the past including pregnancy or having caused a pregnancy. Since many of these questions are personal, confidentiality is critical and an environment where trust can be developed will be essential.

Menarche/Ejaculation: For females, indicate the age in years and months of first menses. For boys, indicate age of first ejaculation.

Last Menstrual Period: Ask the date of the young woman's last menstrual period indicating day, month, and year. Enter the date as specifically as possible in the space provided using two digits for both month and day, entering a zero before the number if either is less than 10.

If the date cannot be recalled, please indicate "unknown" as the option and indicate to the young woman the value of recording a menstrual history. If the young woman has not reached the age of menarche, then so indicate by marking an "x" in the "not applicable (n/a)" box.

Menstrual Cycles: Menstrual cycles are regular if the interval between them occurs at regular intervals. Usually, this is between 21 and 35 days. If the young woman has had menarche, so indicate by marking an "x" in the corresponding box. If the patient is male, indicate "not applicable (n/a)" in the appropriate box.

Dysamenorrhea: For males, indicate "not applicable" and for females indicate whether there is pain associated with menses which tends to limit daily activities. Mark the corresponding box with an "x" if there is menstrual pain.

Vaginal/Penile Discharge: In the corresponding box, mark an "x" if the young person reports either vaginal discharge which may be associated with itching, burning, foul odor, or discoloration. Likewise, for a male, discharge may be associated with rash, burning on urination, or puritis. For either, staining of underwear may indicate a discharge.

Sexually Transmitted Diseases: This refers to diseases transmitted through sexual contact, including human immunodeficiency virus (HIV) even if transmission was acquired by a means other than sexual contact. Mark an "x" in the corresponding box if the history for STD is positive and in the blank space indicate the name of the disease and the approximate date of infection.

Pregnancy History: Indicate the number of pregnancies experienced by the adolescent female or the number of pregnancies caused by the adolescent male. If no pregnancies have occurred, or if the adolescent is not sexually active, mark "0" in the corresponding box. Use the observations section for elaborating on the pregnancy history.

Children: Indicate the number of biologic children the young person has, marking "0" in the corresponding box if there are no children. If there are children present, specify details in the observations section.

Abortions: Indicate the number of abortions of the girl or the number of abortions of sexual partners of the boy. For males, the number should be limited to abortions that sexual partners have had as a result of pregnancies caused by the specific adolescent male being interviewed. If there have been no abortions, mark "0." Elaborate an abortion history under the observations section.

Example of completing the section for "gynecological / urological aspects":

GYNAECOLOGY-UROLOGY	DATE OF LAST MENSTRUATION	REGULAR CYCLES	DYSMENORRHEA	ABNORMAL DISCHARGE/ PENEAL SECRETION	SEXUALLY TRANSMITTED DISEASES	
MENARCHE/EJACULATION years months	Unknown ☒ n/a day month year	yes no n/a ☐ ☒ ☒	no yes n/a ☐ ■ ☒	no yes ☒ ■	no ☒ yes ■ What type?	PREGNANCIES ■ CHILDREN ■ ABORTIONS ■
Observations						

3.13 Sexuality

This section focuses on various aspects of sexual health and reproduction. As is true with other personal questions, these should be asked in private and should be done after assuring confidentiality to the adolescent. At times, it may not be possible to obtain some of this information at the initial visit and, in such circumstances, a follow up appointment should be made.

Need for Sexual Information: If the adolescent indicates a need for sexual information, mark the corresponding box with an "x." Elaboration of questions and concerns of the adolescent should be indicated in the observations section.

Sexual Intercourse: Enter "no" in the box if the adolescent indicates that he or she has not had intercourse. If, on the other hand, the individual has had intercourse, then indicate whether it has been same sex ("homosexual"), opposite sex ("heterosexual") or "both". Mark only one box.

Partner: Indicate the number of sexual partners the adolescent has had in the appropriate box. Specifically, if the adolescent has had "one sexual partner" please so indicate. If there is more than one, indicate "multiple partners" If the individual has not had sexual intercourse, mark "not applicable (n/a)."

Age At First Intercourse: If the adolescent has never had intercourse, mark "0." Otherwise, indicate the age of first intercourse.

Intercourse Associated Problems: In this space, indicate whether the adolescent reports any problems associated with intercourse which may include fears, pain, trauma or questions the adolescent might have. If the individual has never had intercourse, mark the box "not applicable (n/a)."

Contraception: If the adolescent has not had sexual intercourse, mark the box "not applicable (n/a)." If the adolescent has had sexual intercourse and/or is sexually active currently, indicate the frequency with which contraception is used marking the most appropriate box with an "x": "always," "sometimes," or "never."

Condom: Questions regarding condom use are separate from other contraceptive methodologies because of their additional protection against sexually transmitted diseases. If the adolescent is not sexually active, mark "not applicable (n/a)." If the adolescent has had intercourse, indicate whether he or she uses a condom "always," "sometimes," or "never."

Sexual Abuse: Sexual abuse refers to any sexual contact (e.g., exposure, touching, or intercourse) between a minor (one who is legally defined as not sufficiently mature emotionally or mentally to make consenting decisions) and another or between two people where one is forced or compelled to do or experience any sexual contact that is not desired. Indicate whether the adolescent reports ever having experienced sexual abuse or not and elaborate details under the observation section.

Example of sexuality section:

SEXUALITY	SEXUAL INTERCOURSE	PARTNER	AGE 1st INTERCOURSE	TROUBLES W/INTERCOURSE	CONTRACEPTION	CONDOM USE	SEXUAL ABUSE
NEEDS INFORMATION ☒ yes ☐ no	☒ no ☐ hetero sexual ☐ homo sexual ☐ both	☐ one only ☐ multiple partners ☒ n/a	years 00	☐ no ☐ yes ☒ n/a	☐ always ☐ never ☐ sometimes ☒ n/a	☐ always ☐ never ☐ sometimes ☒ n/a	☒ no ☐ yes
Observations							

3.14 Psychological/Emotional Aspects

This section uses four indicators to assess psychological and emotional functioning: body image, self-perception, significant adults, and life perceptions. As is true for other sections of the interview, whenever there are discrepancies between interviewer perceptions and adolescent report, such discrepancies should be noted in the observation section.

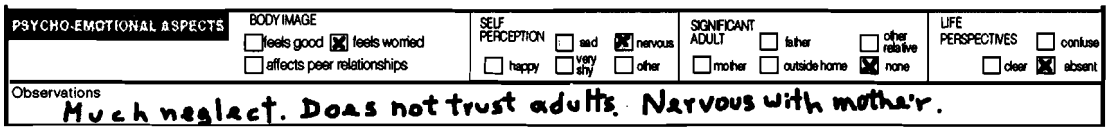
Body Image: This variable inquires into the adolescent's perception of physical and pubertal changes. Report of the response to the following question: "Are you happy with your appearance, with the way your body is growing?" Only one alternative should be recorded.

Self-Perception: This variable reflects the capacity for introspection and self-analysis as well as the feedback the young person receives from his or her environment. It is a proxy measure for self-esteem and can be determined by asking a question such as, "What kind of person do you think you are?" or "How would you define yourself?" Record the opinion of the adolescent.

Significant Adult: This variable measures the degree of social connectedness with adult figures. Connectedness with an adult is an important protective factor. The adolescent should be asked, "Is there an adult who you can turn to in good times and bad to share your thoughts and feelings?" If there is no one, please indicate "none" and make a special note under observations since this is a significant risk variable. If the adolescent indicates that there is someone, please indicate who it is: mother, father, another relative, or someone outside the home.

Life Perspectives: This variable refers to the perception the young person has of his or her future and can be determined by a question such as: "What are your plans for the future?" or "What do you want to do after you finish school?" Such questions are also very useful in determining how the adolescent thinks about these issues; and how clearly the adolescent can articulate future plans should be recorded in the observations section.

Example of completing the section for "psychological / emotional aspects":



3.15 Physical Examination

This section focuses on the physical assessment of the adolescent, including personal hygiene. Note with an "x" in the appropriate boxes the results of the physical examination, including: head, eyes, ears, nose, throat, neck and thyroid, chest and breasts, heart and lungs, abdomen, genital/urinary tract, spine, skin, extremities, neurologic system. If any abnormalities are noted, please record them in the observations section.

Height & Weight: Report the weight in kilograms to the nearest tenth of a kg. Whenever possible, use a balanced scale. The adolescent should be weighed without shoes and wearing as few clothes as possible. Height should be recorded in centimeters to the nearest tenth of a cm. Again, the young person should not be wearing shoes and should be measured on a level surface.

It is important to graph both height and weight on the curves provided on the follow-up sheet. The percentiles should be recorded in their appropriate spaces. In the computer program, you will note that the weight is registered in hectograms and height in millimeters; this avoids the use of a decimal point to note fractions of a centimeter or a kilogram.

Height & Weight Percentiles for Age: In the appropriate box, note percentiles of height and weight for age at the time of the visit. To determine these centiles, it is essential to graph the height and weight data on the graphs provided on the follow-up sheet. When height and weight data are entered into the computer, the percentiles are calculated automatically.

Blood Pressure/Heart Rate: Note the blood pressure of systolic and diastolic measured in millimeters of Hg and the heart rate in beats per minute. The blood pressure cuff used should be wide enough to cover at least two-thirds of the upper arm, must be flat, and the manometer pointing to zero before it is inflated. Do not wrap the arm too tightly with the cuff for that might alter the blood pressure reading. Palpate the brachial artery by placing the stethoscope head over the anticubital area. Inflate the cuff to 150 mm of Hg slowly reducing the air. The appearance of the first noise represents the systolic pressure and the point at which the noise disappears is the diastolic. If the first attempt registers blood pressure of 140 over 85 mm of Hg, then wait one minute and retake the pressure. The average of the two readings is considered to be the blood pressure for that session.

Tanner Staging: Tanner Staging records the sexual maturity rating of the adolescent using breast and pubic hair development for girls and testicular/penile development and pubic hair growth for males. Tanner Staging should be noted as follows:

Breast Development:

Stage 1: (pre-pubertal) Elevation of the nipple. No change from early childhood.

Stage 2: Areola and nipple are elevated to form small "button".

Stage 3: Breast enlargement is present and is elevated from the chest wall along with areola; however, contours between the areola and breast itself are indistinguishable.

Stage 4: Areola and nipple are elevated above the skin of the breast providing a distinct "mound on mound" appearance.

Stage 5: Breast has reached full adult proportions with darkening of areola and elevation of nipple.

If patient is male, leave the box blank and write a "0" in the computer program. If gynecomastia is present (and it is a very common phenomena in adolescent males), it should be recorded in the observation section.

Testicular Staging:

Stage 1: (pre-pubertal) Testes, scrotum and penis are not changed from early childhood. The volume of the testes is less than 1.3 cm^3. The best way to measure testicular volume is to use a Prader or orchidometer.

Stage 2: Testes and scrotum are enlarged. Skin of the scrotum appears reddened and ruggae (skinfolds) begin to appear giving the skin of the scrotum a ridged appearance. Penis width and length have not increased from childhood. Volume of the testes is 1.6 cm^3 to 6 cm^3

Stage 3: Penis increases in length, testes and scrotum continue to develop. Testicular volume ranges from 6 to 12 cm^3

Stage 4: Penis increases in diameter with growth and development of the glans penis. Testes continue to increase with the volume between 12 and 20 cm^3

Stage 5: Adult genitalia is present with testicular volume greater than 20 cm^3.

For females, leave the box blank but register a "0" in the computer program.

Pubic Hair Assessment:

Stage 1: (pre-pubertal) No pubic hair is present.

Stage 2: Growth of soft, long straight hairs is noted.

Stage 3: Hair increases, is darker, more rough and curly than previously. It extends over the pubis.

Stage 4: Dark, curly hair is present. Does not fully extend to the entire genital area.

Stage 5: Adult hair is present and extends to a full horizontal line above the pubis for a female and to the inner surface of the thighs for a male (and occasionally for females).

Stage 6: Dark hair extends up the linea alba.

Example of completing the section for "physical examination":

PHYSICAL EXAM	WEIGHT (Kg)	weight/age percentile	weight/height percentile	SKIN	HEAD	VISION	HEARING	MOUTH and TEETH	NECK and THYROID
GENERAL	240	-3	-8						
normal ☐ abnormal ☒	HEIGHT (cm) 1263	height/age percentile -3		normal ☒ abnormal ☐	normal ☒ abnormal ☐	normal ☒ abnormal ☐	normal ☒ abnormal ☐	normal ☐ abnormal ☒	normal ☒ abnormal ☐

THORAX and BREASTS	HEART and LUNGS	BLOOD PRESSURE	ABDOMEN	GENITAL/URINARY TRACT	TANNER	TESTICULAR VOLUME	SPINE	LIMBS	NEUROLOGIC SYSTEM
normal ☒ abnormal ☐	normal ☒ abnormal ☐	90/60 HEART RATE 75 strokes/min	normal ☒ abnormal ☐	normal ☒ abnormal ☐	breasts ☐ pubic hair 1 genitalia 1	Right cm^3 02 / Left 02	normal ☒ abnormal ☐	normal ☒ abnormal ☐	normal ☒ abnormal ☐

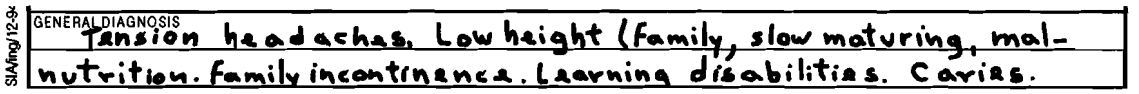
Observations
Physical Aspect: small, proportionad. Many carias

3.16 General Diagnosis

The section is completed at the end of the clinical encounter. In this section, clinical impressions are recorded and working diagnoses are entered. It is important to enter not only physical conditions but social and emotional problems (including learning disabilities) which impact on the adolescent's functioning.

If possible, note the corresponding codes to the clinical diagnoses which can be found in the "list of diagnoses" available in the appendix. These codes are based upon established international conventions for condition reporting for both physical and mental health issues.

The computer program allows for reporting up to three diagnoses, each of four digits. The first two digits of each code correspond to a summarized classification and the last two digits providing additional specificity.

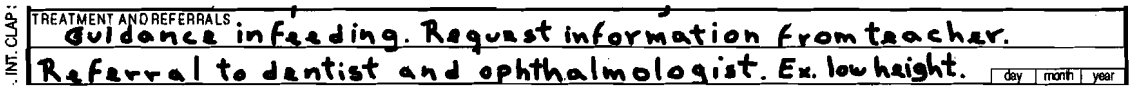


Example of completing the section for "general diagnosis":

3.17 Treatment Plan and Referrals

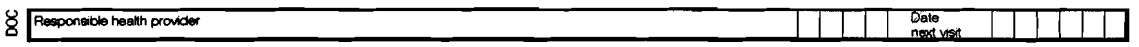
In this section, recommended treatments should be noted as well as suggested referrals. At times, treatment may consist of medication but equally as often it may involve counseling, exercise, nutritional recommendations, educational assessments, vocational recommendations, immunizations or family counseling. In addition to the recommendations, it is important to add the recommendation code which can be found in the appendix. Recommendation codes are two digits each; and the program allows for coding up to four items.

Example of completing the section for "treatment plan and referrals":



Interviewers please note: It is important to indicate who interviewed the adolescent and the accompanying people. The computer program allows for interviewer codes to be established for easy tracking.

Date of next visit: Note the date, month, and year of the next visit.



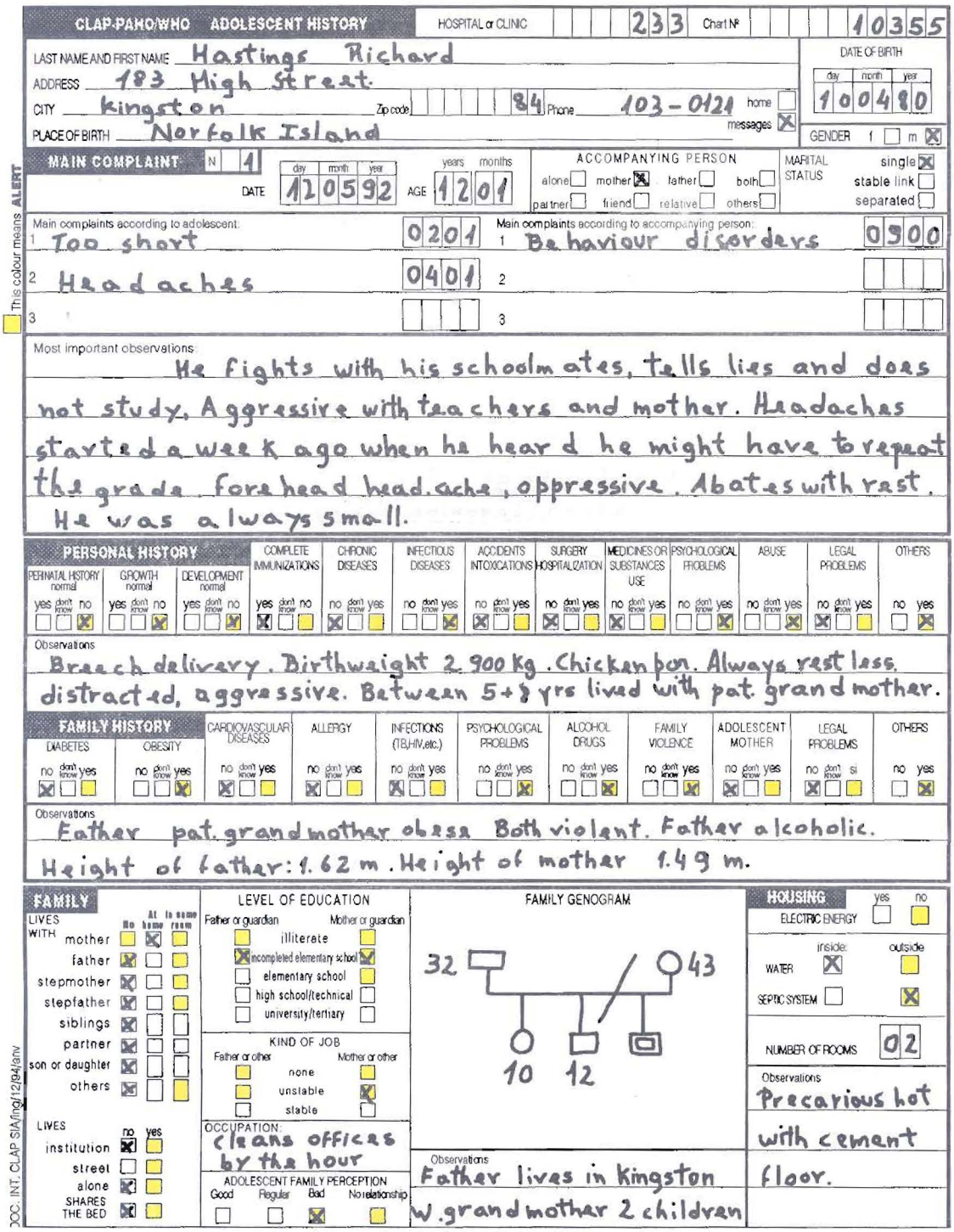


Figure 4a - Example of the front side of the AdH main form completed: please remember to use a legible handwriting at all times.

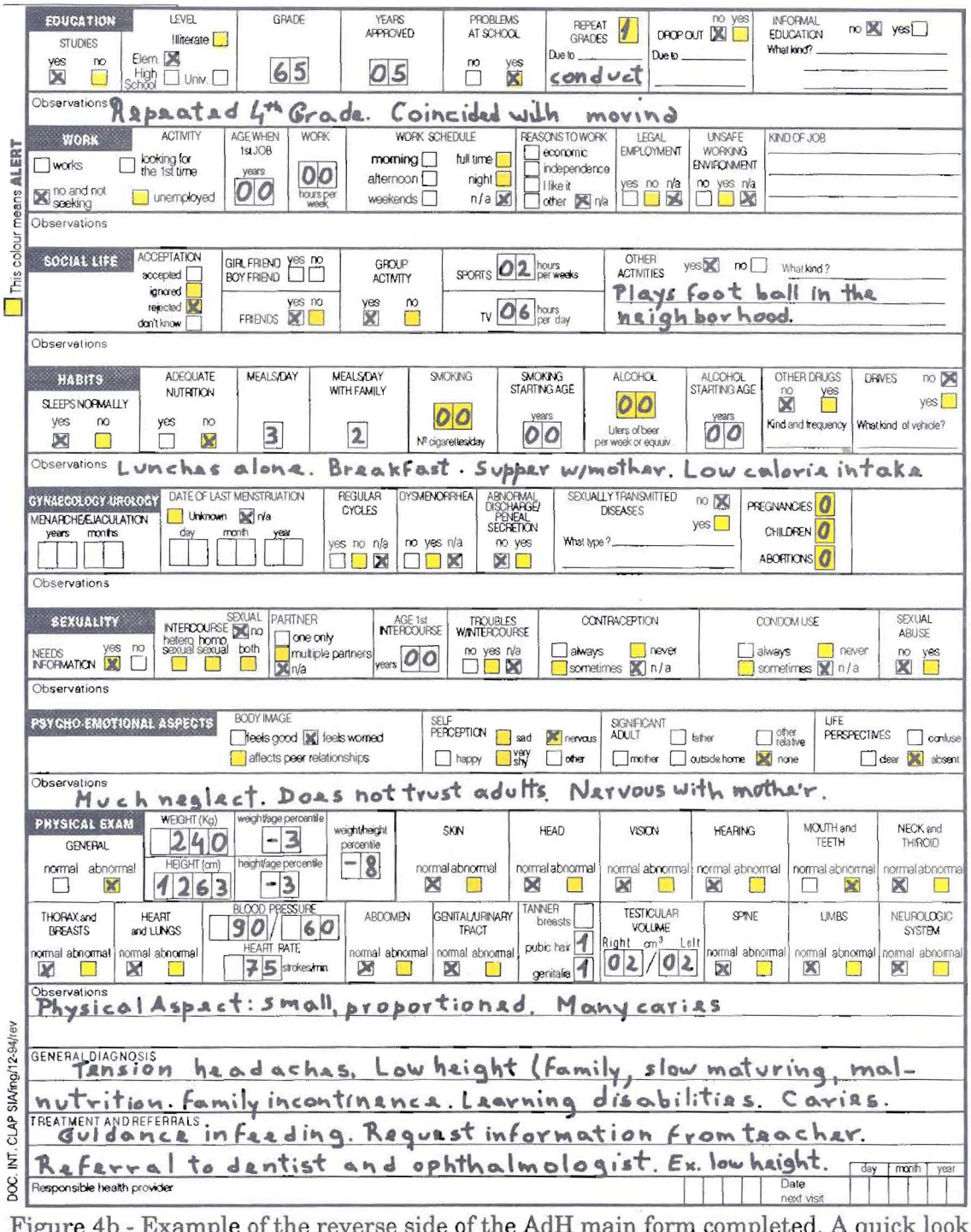


Figure 4b - Example of the reverse side of the AdH main form completed. A quick look at the yellow boxes marked with an "x" points to the main problems faced by this Adolescent.

4. COMPLETING THE AdH FOLLOW-UP FORM

4.1 General Remarks

The follow-up form has five sections allowing for five follow-up visits to be recorded on a single form. In addition, it includes height and weight curves for tracking physical development and nutrition. When completed, more follow-up forms can be used for additional visits.

Hospital or Clinic: Note the identifying code assigned to the clinic or institution providing services to the adolescent. The code may have up to seven digits. Recording this code allows for the clinical record to be linked with the institution when it is entered into a regional or national database.

Clinical Record Number (CR Nº.): Indicate the Clinical Record or chart number assigned to the adolescent at previous visits. It is important that this number is consistent with what has been previous assigned for it allows matching follow-up forms with the main complaint form. The clinical record number allows for up to 10 digits.

4.2 Chief Complaint of Follow-Up Visit

Follow-up visit number: Number Follow-up visits independently from Main Visits Forms. Follow-up visits should be numbered from 1 to 5 on the first form.

Date: Indicate the day, month, and last two digits of the year of the present visit. Both day and month must also indicate two digits and if less than 10, the number should be preceded by a zero.

Age: Note the age of the adolescent at the time of visit in years and months.

Accompanying person: Indicate in the corresponding box whether the adolescent is attending the visit alone or whether he or she is accompanied by: mother, father, both, a partner, a friend, a relative, or other individual. Choose only one alternative, and, if further information is needed, so indicate in the observations section.

Marital status: Mark with an "x" in the box according to whether the adolescent is currently: "single", in a "stable relationship", or separated.

Date of last menstrual period: For males, enter "not applicable (n/a)" and for females, mark the box "don't know" if she is unable to indicate the date of her last menstrual period. Otherwise, note the date in the space provided.

Height/weight: Record weight in Kg to the nearest tenth of a kilogram. The patient should be weighed without shoes and with a minimal amount of clothing. Height should be measured in cm to the nearest tenth of a centimeter without shoes on a flat surface with his or her back against a wall using a fixed measuring scale. Both height and weight must be measured at each visit and they should be graphed on the height and weight curves found on the follow-up sheet with percentiles registered in the corresponding boxes. If the computer program is used, weight will be registered in hectograms and height in millimeters so as to avoid the decimal point.

Height and weight percentiles for age: Write in the box the percentile of height and weight for age of the adolescent at the time of the visit. These figures can be identified by graphing height and weight value on the curves on the charts provided. The only factors which have been assigned risk values are below the 10th centile and over the 90th centile. If local height and weight curves are available, they should be used.

Height and weight centiles: In the percentile for weight/height box, enter the centiles based on the plotted curves. Again, if local values are known, they should be used.

Blood pressure/heart rate: Note the systolic and diastolic pressures in mm of Hg using the technique noted in Chapter 3. Additionally, note the heart rate in beats per minute.

Tanner Staging: If the adolescent is a female, note both breast and pubic hair stages. If the adolescent is a male, genital and pubic hair assessment should be done in accordance with the technique noted in Chapter 3.

Chief complaints of the adolescent: Note the primary concerns reported by the adolescent at the commencement of the visit. To the extent possible, they should be noted in the order of importance the adolescent reports them. Problems should be coded according to the code numbers provided in the appendix.

Primary concerns of the accompanying person: Note the primary problems raised by the accompanying person in the order that he or she presents them. These may or may not coincide with the concerns of the adolescent. As was done with the adolescent, code these problems using the numbers provided in the appendix.

Relevant changes/observations: Indicate any changes that have occurred since the initial main complaint (at the time the last AdH main complaint form was completed), if relevant, or new problems that have arisen. Additionally, note significant life changes that have happened to the adolescent physically, socially, emotionally, or in relation to education, vocation, sexuality, or the family.

4.3 General Diagnosis

This section is completed at the end of the follow-up visit noting all working diagnoses. It is important to record not only physical conditions but significant social, emotional, educational or familial concerns as well. Using the appendix, add the corresponding codes for the diagnoses. The computer program allows for coding of up to three diagnoses of four digits each.

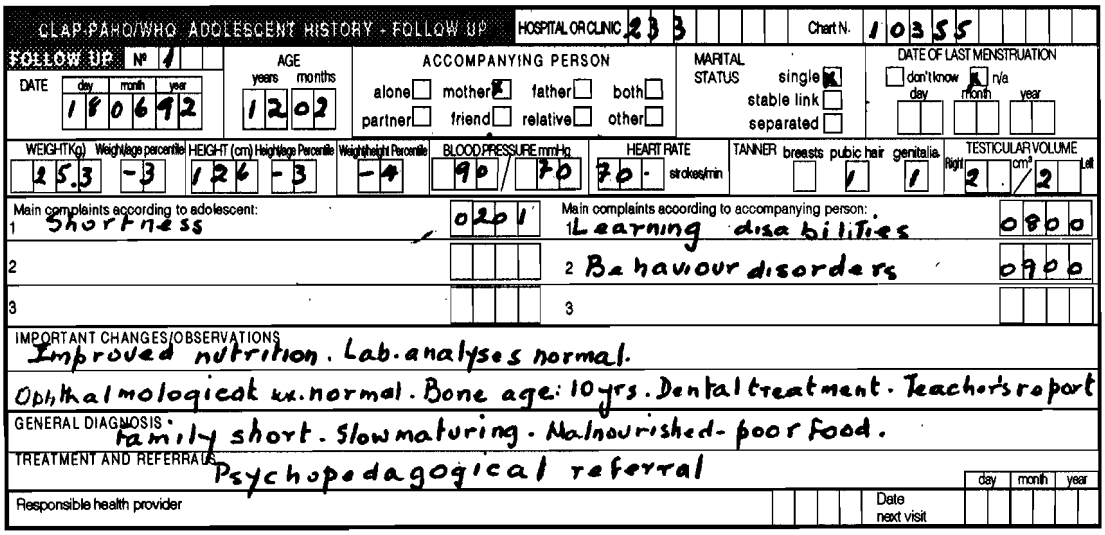
4.4 Treatment & Referrals

Treatment & Referrals: Note the treatment plan and proposed referrals provided to the adolescent and/or the accompanying individual. While at times the treatment may focus on medications, it may also include recommendations for: nutrition, exercise, risk behavior reduction, education, vocational training, family counseling, mental health or immunizations. It is important to note all significant recommendations, coding them with the appropriate numbers as indicated in the appendix. The computer program allows for three treatments to be coded.

Interviewer: Note the name of the individual who completed the interview, as well as his or her code number.

Date of Next Visit: Note the day and month of the next visit. Enter two digits for both day and month. When either is less than 10, enter a zero before the number.

Example of completing the follow-up form":



CLAP-PAHO/WHO ADOLESCENT HISTORY - FOLLOW UP
HOSPITAL OR CLINIC 23 3 Chart N. 10355
FOLLOW UP Nº 1
DATE day 18 month 06 year 92
AGE years 12 months 02
ACCOMPANYING PERSON: alone ☐ mother ☒ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐
MARITAL STATUS: single ☒ stable link ☐ separated ☐
DATE OF LAST MENSTRUATION: don't know ☐ n/a ☒ day ☐☐ month ☐☐ year ☐☐☐☐
WEIGHT(Kg) 25.3 Weight/age percentile -3 HEIGHT (cm) 126 Height/age Percentile -3 Weight/height Percentile -4
BLOOD PRESSURE mmHg 90/70 HEART RATE 70 strokes/min
TANNER breasts ☐ pubic hair 1 genitalia 1
TESTICULAR VOLUME Right 2 / 2 cm³ Left

Main complaints according to adolescent:		Main complaints according to accompanying person:	
1 Shortness	0201	1 Learning disabilities	0800
2		2 Behaviour disorders	0900
3		3	

IMPORTANT CHANGES/OBSERVATIONS
Improved nutrition. Lab. analyses normal.
Ophthalmological ex. normal. Bone age: 10 yrs. Dental treatment. Teacher's report
GENERAL DIAGNOSIS: family short. Slow maturing. Malnourished- poor food.
TREATMENT AND REFERRALS: Psychopedagogical referral
Responsible health provider
Date next visit day ☐☐ month ☐☐ year ☐☐☐☐

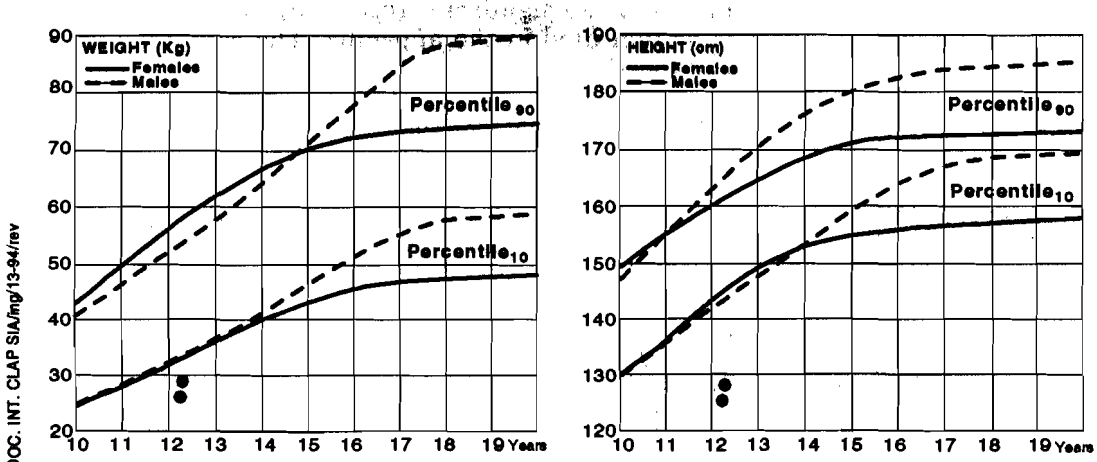
4.5 Graphs of Weight & Height

At the end of the follow-up form, there are two curves, one of which corresponds to height for males and females while the other is for weight. These curves are derived from PAHO/WHO as published in the *Medical Handbook for Adolescents*, Paltex Series No. 20, 1992.

Both height and weight curves show the centiles which correspond to the recorded weight and height for age. These centiles are important not only for evaluating nutritional status but for the early detection of health problems as well. These curves allow for comparing physical growth to peers.

, The curves in the adolescent history indicate the 10th and 90th centiles with risks increasing for those below the 10th and above the 90th centiles for height and weight. The computer program has the capacity to generate local tables and curves based on data collected.

Example of completing the weight & height graphs":



Graphs are from PAHO "Adolescent Medicine Manual" PALTEX series Nº 20, Washington, D.C., USA, 1992. Extended to 20 years of age.

DOC. INT. CLAP SIA/mg/13-94/rev

CLAP-PAHO/WHO ADOLESCENT HISTORY - FOLLOW UP | HOSPITAL OR CLINIC 233 | Chart N 10355

FOLLOW UP Nº 1 | DATE day 18 month 06 year 92 | AGE years 12 months 02 | ACCOMPANYING PERSON: alone ☐ mother ☒ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☒ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: don't know ☐ n/a ☒ day month year

WEIGHT(Kg) 25.3 | Weight/age percentile -3 | HEIGHT (cm) 126 | Height/age Percentile -3 | Weight/height Percentile -4 | BLOOD PRESSURE mmHg 90/70 | HEART RATE 70 strokes/min | TANNER breasts pubic hair 1 genitalia 1 | TESTICULAR VOLUME Right 2 cm³ / 2 Left

Main complaints according to adolescent:
1 Shortness 0201
2
3

Main complaints according to accompanying person:
1 Learning disabilities 0800
2 Behaviour disorders 0900
3

IMPORTANT CHANGES/OBSERVATIONS
Improved nutrition. Lab. analyses normal.
Ophthalmological ex. normal. Bone age: 10 yrs. Dental treatment. Teachers report

GENERAL DIAGNOSIS
family short. Slow maturing. Malnourished - poor food.

TREATMENT AND REFERRALS
Psychopedagogical referral

Responsible health provider | Date next visit day month year

FOLLOW UP Nº | DATE day month year | AGE years months | ACCOMPANYING PERSON: alone ☐ mother ☐ father ☐ both ☐ partner ☐ friend ☐ relative ☐ other ☐ | MARITAL STATUS: single ☐ stable link ☐ separated ☐ | DATE OF LAST MENSTRUATION: don't know ☐ n/a ☐ day month year

WEIGHT(Kg) | Weight/age percentile | HEIGHT (cm) | Height/age Percentile | Weight/height Percentile | BLOOD PRESSURE mmHg | HEART RATE strokes/min | TANNER breasts pubic hair genitalia | TESTICULAR VOLUME Right cm³ / Left

Main complaints according to adolescent:
1
2
3

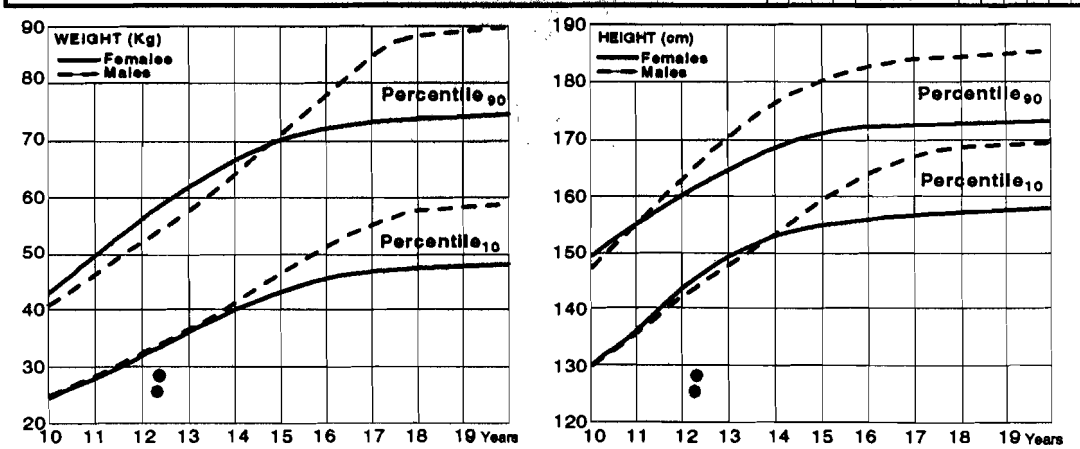
Main complaints according to accompanying person:
1
2
3

IMPORTANT CHANGES/OBSERVATIONS

GENERAL DIAGNOSIS

TREATMENT AND REFERRALS

Responsible health provider | Date next visit day month year



DOC. INT. CLAP SIA/mg/13-94/rev

Graphs are from PAHO "Adolescent Medicine Manual" PALTEX series Nº 20, Washington, D.C., USA, 1992. Extended to 20 years of age.

Figure 5- Example of a completed AdH, follow-up form.

5. THE COMPUTER PROGRAM

5.1 General Remarks

One of the basic purposes of the Adolescent Information System is to obtain complete and reliable data on the adolescent population served. To achieve this aim, a computer program was developed to be installed and used by the clinical staff itself (or by whoever is responsible for data management). This chapter explains how to install the program, how to enter and verify the data.

5.2 Installation of the Programs

Before you install SIA, be sure to have the following:

- Computer with a DOS operating system, version 3.3 or later;
- 5-1/4 inch or 3-1/2 inch floppy disk drive;
- Hard disk;
- RAM Memory of 2 Mbytes or more;
- Printer;
- CLAP floppy disk with the SIA software.

To install SIA, type INSTALL, which does the following:

- Accesses sub-directory SIA (creates it if it does not exist);
- Copies programs from floppy disk into the sub-directory;
- Creates empty files for clinical data.

To install, place CLAP diskette in a diskette slot or drive (it can be drive A: or B:). To select that unit, type A (or B:) and then a colon (:)

C:\>A: Followed by the <ENTER> key

From now on, the validation key will be symbolized by <ENTER>

Run the installation program specifying the disk on which you want to install the system (it can be disk C: or disk D: or disk H: if you have a network). Let us suppose it is disk D:

C:\>A:INSTALL D: <ENTER>

Before proceeding to install the program, the presentation screen appears with the name and address of the supporting institution as well as the version number. Press any key to continue with the installation. At the end of it, the screen will inform you that the starter file has been copied into the root directory of the disk:

"The SIA.BAT starter file has been copied onto the disk."

The SIA is now installed; and you must return to disk (C: or D:) in the following manner:

A:\>C:<ENTER> and then from disk C: start with:

C:\>SIA<ENTER>

When first run after the installation, the SIA must create some databases and prepare the disk for future work; to do so will require approximately half a minute of waiting time. Later on, the start up is immediate.

The daily command to operate SIA is simply: C:\>SIA<ENTER>

The system responds with a presentation screen like figure 6.

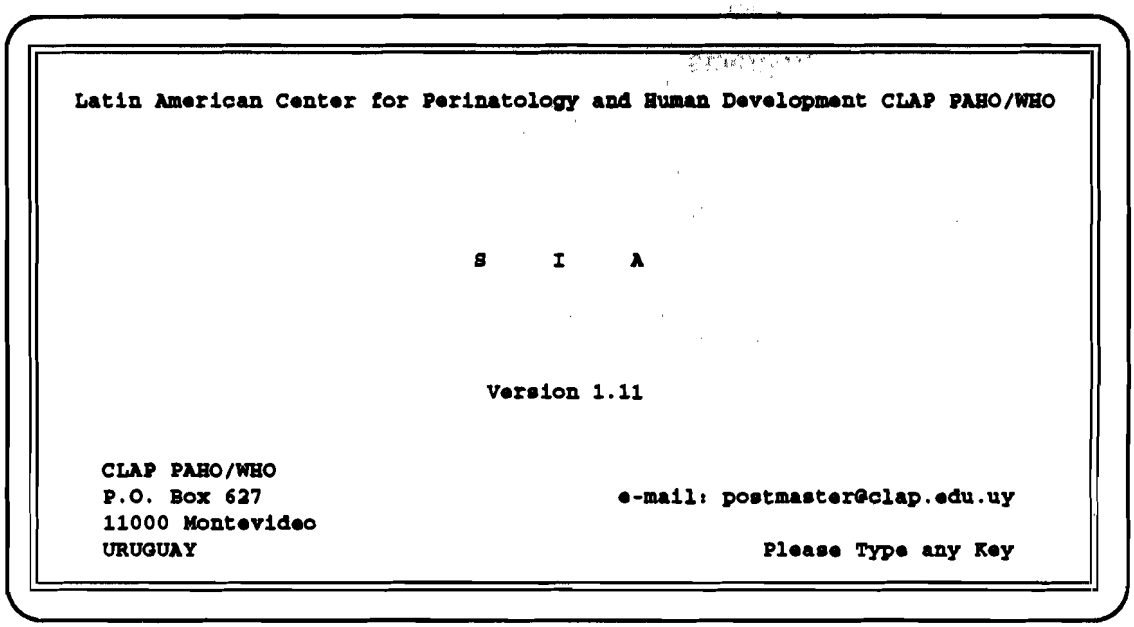


Figure 6 – Initial screen: Note the number of the version and the address of CLAP.

The user can decide to install the System in any directory or sub-directory. To do this, the command INSTALL must be followed by the name of the directory in which the user wants to install SIA. This sub-directory must have been created previously with:

C:\>MD HOSPITAL<ENTER>

To install SIA in the sub-directory C:\HOSPITAL, the command is:

C:\>A:INSTALL C:\HOSPITAL

For the daily running of the SIA installed in the sub-directory HOSPITAL, the command is:

C:\>SIA C:\HOSPITAL

If a version of SIA has to be updated, the procedure is the same as when installing it for the first time, being very careful to back up the data beforehand. During the update installation, the screen indicates that the system has already been installed and asks whether only the programs are to be copied or whether programs with blank data are to be copied. The warning message is the following:

"The C\SIA already exists. Answer "P" to copy the programs, "T" to initiate data and programs or "C" to cancel the installation".

The situation of copying data and programs ("T" for total) happens after a period of testing, at the end of which the data need not be retained and true data are to be entered onto the disk.

5.3 General Operation Guide

The operation of the programs is based on simple commands which make it easy to navigate the different screens and levels. The <ESC> key indicates a backward step. The <ENTER> is the key that validates the values displayed or the commands; after selecting a program with the arrow keys, <ENTER> is the key that runs the program. After entering a number using the corresponding keys, <ENTER> is the key that validates it. The hot keys F1 to F6 have an immediate effect and their description appears at the bottom of the screen when they are in use (see below for description of each).

There are 5 instances in the operator - machine dialogue : the operator de fines the passage from one to the other. The preparation, running and presentation of results are similar in all the programs. The 5 levels of dialogue are as follows:

5.3.1 Initial Presentation Screen: This screen was described in Figure 6. Any key will give access to the next level.

5.3.2 Main Menu: Shows the name of the institution and a summary of the accessed databases. The menu is shown in Figure 3. From this menu, the following keys are used:

<ESC> to return to the operating system.

F1 **Help:** Shows the help screens.

F2 **Database:** Allows the database to be chosen.

F3 **Hospital:** Can choose the name of the institution. Can select one of the CENTER.DAA" type files and eventually edit a new one. It shows the contents of the "CENTER.DAA".

F4 **Browse:** It allows the records of the chosen database to be seen on the screen. The four arrows and PgUp, PgDw and Home are used to browse through the data. The same function keys are used when inspecting screenfuls of SIA reports.

5.3.3 Preparation of the Program: All the specific questions about the program to be run are displayed. The operator defines values in the fields by moving amongst them and the program is started by pressing the <ENTER> key. Access to the following keys is available from the preparation screen (see also bottom line of Figure 7):

<ESC> to return to the menu

F1 **Help:** Accesses a help screen specific to the program.

F2 **Database:** Same as from main menu screen.

F3 **Hospital:** Same as from main menu screen.

F4 **Variables:** Helps to choose a variable when this is needed; otherwise, it displays all variables as an information window which is abandoned by using <ESC>.

F5 **Codes:** It shows the variables as in F4; when selecting a variable, a window appears with a line of explanation and its codes. As an information window, it is left by using <ESC>; if it is used to help choose the values of codes, it will disappear when it is no longer required.

F6 **Period:** Presents a window asking for the time period to be selected. To leave this window, "Y" is chosen in the confirmation message. (Do you confirm this period of time?) (Y/N). Along with the period, important areas are selected, such as the type of complaint (main or follow-up) in the Adolescents Information System.

F7 **Choice:** Presents a window asking for criteria for selection of histories. Windows F4 and F5 can still be used to choose variables and to recall codes. "Y" is used to exit when presented a confirmation message (Do you want to confirm this selection ?) (Y/N).

5.3.4 Running: Having finished the "Preparation of the Program" stage, it is started by pressing the <ENTER> key; then the screen displays the message "please wait" with the history count and the parameters chosen in the "preparation" phase. While it is running, the message "<ESC> Interrupt" is displayed to give the operator the option to stop processing and look at the partial results reached.

5.3.5 Display of Results: After running the program the results are displayed. If the report has many pages it indicates its size and asks for the name of the file in which it is to be placed. Otherwise it is shown on screen and can be either stored to file or printed. From the display screen the following keys can be used:

<ESC> Menu

F1 Help: accesses text which helps to understand the results displayed.

F2 Save: Saves the full report as text on disk.

F3 Print: To print the results.

F4 Another running: Goes to the preparation screen keeping the parameters of the present run so as to repeat them or edit them easily.

From every program during the preparation stage, it is possible to choose data to process as desired. For instance, a BASIC STATISTICS can be applied to a given period of time (e.g., 1994) or to a sub-population (e.g., smokers). The selection, according to date, is obtained by the F6 key and the selection for any set of characteristics is selected using the F7 key. The following two paragraphs give details for these two modes of selection.

5.4 Selection according to dates (F6)

The selection according to dates refers to the date of a main visit or of a follow-up visit. The values entered should correspond to the first and last dates desired. Should the earliest date appear blank, the data base includes at least one history without a date. If both dates are blank, itmay be that either all the histories were entered without a date or the index files were not updated ; in the latter case, the menu for infrequent has a program that will bring them up-to-date. Figure 7 is an example of the screen display in response to the F6 key.

```
CLAP PAHO/WHO          Description of a variable                2 Oct 95
                Name of the User Institution City - COUNTRY

ADGENER.DBF                              N = 92      14 Jan 80 - 13 Mar 84
ADPRINC.DBF                              N = 99       4 Jan 94 - 10 Oct 94
ADVOLU.DBF                               N = 189      4 Jan 94 - 10 Oct 94

                    Definition by master variables

  Select a period of time for each Data Base

  ADGENER.DBF    initial date: 01/03/85        final date: 30/09/85

  ADPRINC.DBF    initial date: 20/03/94        final date: 10/10/94

  ADVOLU.DBF     initial date: 20/03/94        final date: 10/10/94

  <ESC>Menu F1Help  F2Data Base F3Hosp F4Var F5Codes F6Period F7Selection
```

Figure 7. Screen display for selection by date called by F6. Note that a range of dates can be defined for both types of visits (Main visits in ADPRINC.DBF and follow-ups in ADVOLU.DBF) besides the birth dates registered in the ADGENER.

5.5 Choice by Combination of Variables (F7)

The choice according to the characteristics of the histories is optional and is selected using the F7 key. Figure 8 is an example of the screen on which the conditions for the inclusion of the histories is specified. The screen displays 3 columns of 5 conditions each. It is enough for the conditions in each column to be verified by one or the other alternately for the history to be included. The columns are combined by the "OR" operator. For instance, the first column asks for an age between 10 and 12 years, and the second column asks for an age of over 15 years; in the study of adolescents, this combination excludes those of 13 and 14 years of age.

On the other hand, for the condition in a column to be verified, all the conditions specified in the 5 lines must be verified simultaneously. This is the "AND" operation. For instance, a column may contain the condition of alcohol consumption AND driving AND smoking.

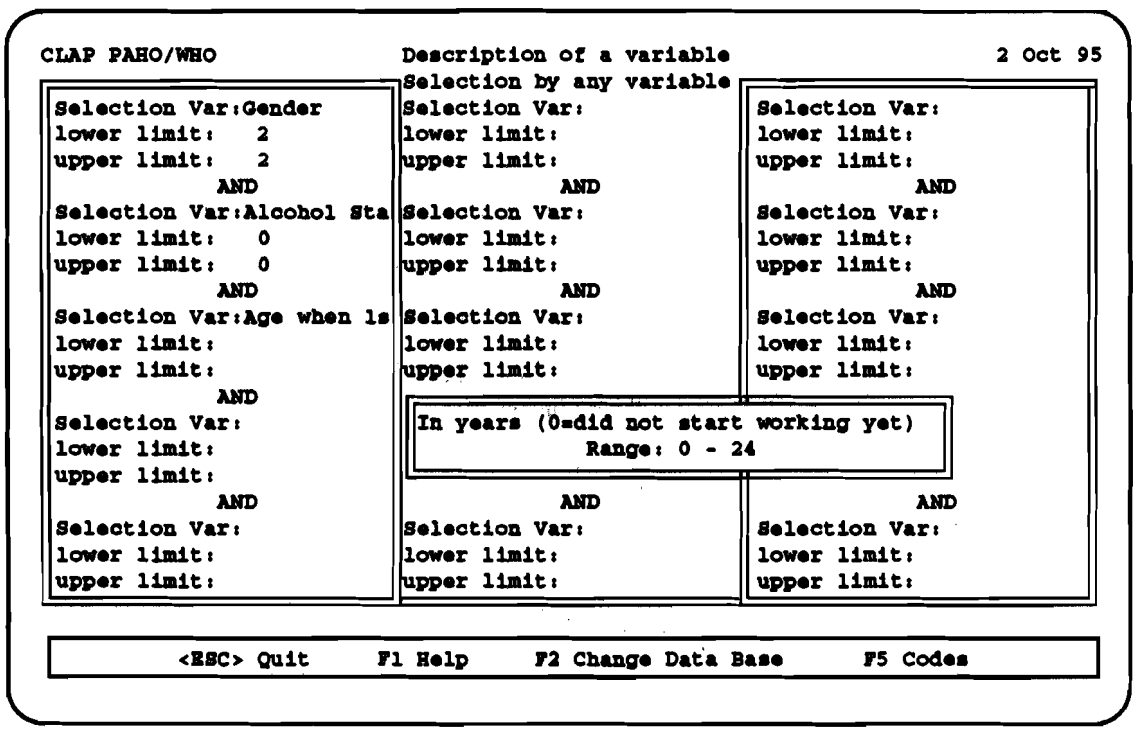


Figure 8. Screen displaying choice according to characteristics: Columns are combined with OR and, within each column, the lines are joined by the AND operator. In this example, boys are selected who have no background of consumption of alcohol and the range of ages at which they started to work is about to be chosen.

5.6 Data entry - Summary of a Case

The computer for data entry should be close to the consulting rooms or clinics. This also allows the health providers easy access to the data. The ideal person for carrying out the task of data entry is a member of the health team. Nevertheless, it can be done by clerical staff. To sit at the computer to answer the questions the system asks about the case is a perfect time to review all the variables. In the course of this session, all the data which were omitted from the form will stand out.

To enter histories, the program ACCESS TO A HISTORY is used, first in the menu list. To enter a history, the operator has before him the AdH form which was filled in during the adolescent's visit. He needs no other information. While waiting for the entry of each variable, the program displays an explanation. Above on the right is the number of histories already in the file.

On entering a value outside the range of the variable, the program displays an 'error' message and allows the value to be modified. In the Appendix, there is a list of the variables for the AdH with the maximum and minimum values accepted by the system. For instance, the age of the adolescent may not be under 10 nor over 24 years.

If any data is missing, the operator need only press <ENTER>; the missing data can be added at some later time by accessing the history with the same program. If, during the entry of data belonging to a clinical record, it were necessary to jump to another variable, the operator can reach it with the keys <PgUp> or <PgDw>, that navigate through the sections of the AdH forms.

Once all the data are entered on a form, the operator must save the history by pressing the F6 key and start the entry of a new case. If the data are not saved, one will keep seeing those just entered. After entering the data on a form, the operator can obtain a summary of the history of the case so as to include it in the patient's chart. To do this, press the F8 key which saves the data entered and prepares a report. Figure 9 is an example of the summary of general data on the adolescent taken from the AdH general database (ADGENER.DBF).

To enter main form and follow-up data, the screen must first be cleared of general data by pressing <ESC> and then choosing the base ADPRINC.DBF and later ADVBOLU.DBF. The data are entered in the same way and here again one can obtain individual summaries of the follow-up visit. Figures 10 and 11 show the summaries of the main form and the follow-up. These texts can be filed on disk to edit them later or they can be printed straight away.

CLAP-PAHO/WHO INFORMATION SYSTEM OF THE ADOL AD1011 Ver 1.1 20 Nov 95

Name of the User Institution City - COUNTRY

LETTER OF DISCHARGE OF ADOLESCENT

Last Name A.....	Institution Num. 0000001
First Name C.....	Record Number 0000036343
Place of Birth	Code Pl.of Birth.
Date of Birth 17 May 82 Gender Female	Telephone
Address 79, High Street	
City Kingston	Zip Code

Menarche/Ejaculation 10 years 10 months

Started Work at 00 years	Start Tobacco at 00 years
First Intercourse at 00 years	Start Alcohol at 11 years

PERSONAL HISTORY TAKEN DURING MOST RECENT VISIT:

Perinatal	normal	Substance/Med. Use	no
Growth	normal	Psychological Probl	no
Development	normal	Complete Immunizati	complete
Chronic Diseases	no	Abuse	no
Infectious Diseases	no	Legal Problems	no
Accidents/intoxicat	no	Other It.Pers.Hist.	no
Surgery/Hospitaliza	no		

FAMILY HISTORY TAKEN DURING MOST RECENT VISIT:

Cardiovascular Fam	no	Family Violence	no
Infections	no	Fam. Legal Problems	no
Alcohol/drugs Famil	no	Allergy	no
Obesity in Family	yes	Adolescent Mother	no
Diabetes in Family	no	Other Fam. Problems	no
Psychologic.Pr.Fam.	no		

Variables defined locally: FREE1 , FREE2 , FREE3

Comments: _____

_____ Signature: _____

Figure 9. Example of a Summary of the AdH general file of an Adolescent. On this sheet are included the unvarying data of the patient and the family, as they were obtained at the most recent visit.

```
CLAP-PAHO/WHO INFORMATION SYSTEM OF THE ADOL AD1012 Ver 1.1  20 Nov 95
Name of the User Institution City - COUNTRY

              LETTER OF DISCHARGE OF ADOLESCENT

Last Name A.............                    Institution Num.0000001
First Name C............                   Record Number 0000036343

  MAIN COMPLAINT NUMBER 01    Date  7 Jan 94      Age 11 years 04 m
Accompanying person mother              ;     Marital Status single
Complaints: A146.6, A023..

Complaints acc. to accompanying pers.: .

FAMILY Lives with mother
In same room as nobody
Shares the bed no ;level educ.mother high school/;father elementary sc
Job of mother unstable  ;father stable      ;Family good

HOUSING Electricity yes;Water outside; Septic System inside ; 02 rooms

EDUCATION Studies yes;level elementary sch gr.05;years 06;problems no
informal education yes;          repeat grades   ;          dropout no
due to .

WORK no and not seeking;since 00 years;00  hrs.p/week n/a

SOCIAL LIFE accepted          ;G/BFriend no ;Friends yes;Group Act. yes
04 hs sport/w.; 02 hs TV/day; Other act. no

HABITS Normal sleep yes;     Adequate nutrition yes;      2 meals/day;
2 meals w.fam.;00 cig/day since 00 years;02 1 beer/week.since 11 years
Other drugs no :                                          ; drives no

GYNAECO-UROL. reg. cycles yes; dysmenorrhea no ;abnormal discharge no
STD no ; pregnancies of couple 0 ; children 0 ; abortions of couple 0

Sex:Need info.yes; intercourse no          since 00y; partner n/a

PSY.Image feels go;Selfperc.nervous ;Sig.adul.mother   ;Perspec.confus

PHYSICAL ExAM: abnormal;  W= 42.0Kg (c69);  H=1.490m (c73);  (W/H c  )
Bl.Pr.112/094; H.Rate 065 b/min; Tanner Breasts 2;Pubic Hair 2;Genit.0
Test.Vol.Right 00 cm3; Left 00 cm3. Abnormal Findings: Mouth and Teeth,
Thorax and Breasts.

Gen. Diagnosis: A023.
Treatments:
H.Provider0002 ; Next Visit  7 Apr 94;FREE1      ;FREE2      ;FREE3

Comments:_____ Signature _____
```

Figure 10. Example of a Summary of the AdH main form visit of an adolescent. This example contains a great deal of information, reflecting a detailed session.

CLAP-PAHO/WHO INFORMATION SYSTEM OF THE ADOL AD1013 Ver 1.1 20 Nov 95
Name of the User Institution City - COUNTRY

LETTER OF DISCHARGE OF ADOLESCENT

Last Name A..... Institution Num. 0000001
First Name C..... Record Number 0000036343

FOLLOW UP NUMBER 004 Date 10 Mar 95 Age 13 y 01 m

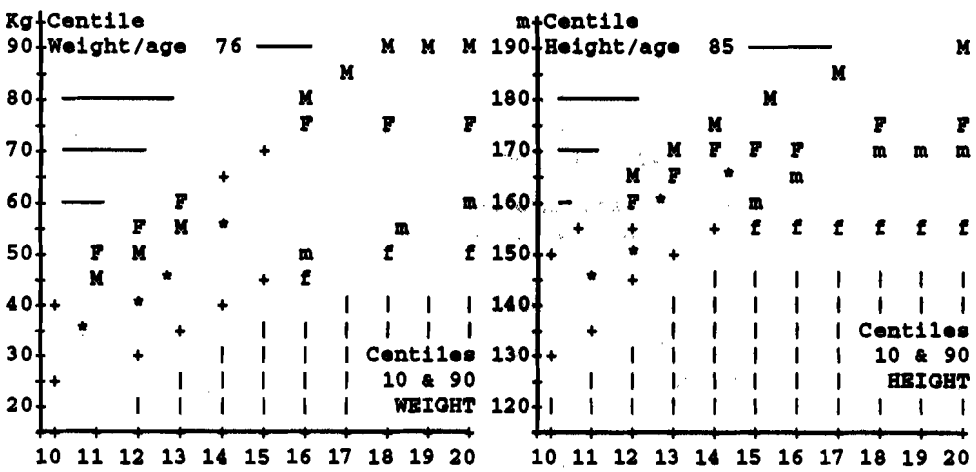
Accompanying pers. mother ; Marital St.single ; DLM 2 Jan 95
Complaints: Headaches.

Complaints according to accompanying pers.: .

PHYSICAL ExAM: 54.0Kg centile 76; 1.640m centile 85; (W/H centile)
B1.Pr.141/071; H.Rate.055 b/min; Tanner breasts 2; pubic hair 1; gen.0

Gen. Diagnosis:
Treatments:

WEIGHT AND HEIGHT IN PRESENT AND PREVIOUS VISITS



Responsible Health Provider Date of Next Visit: 10 Jun 95

Variables defined locally: FREE1 , FREE2 , FREE3

Comments:_____

_____ Signature_____

Figure 11. Example of a Summary of Follow-up of an adolescent. The data are those obtained at the latest follow-up session but the graphs include all the points for weight and height of previous sessions. This is the fourth follow-up session and there are 4 asterisks (*) on each graph. The letters F and M show the 90th centiles for females and males; the letters f and m access the 10th centiles.

5.7 Data Backup

It is good practice to back up the data entered into the computer so as to be able to retrieve them should the computer fail. The backup should be made each time a batch of histories is entered, copying the data onto two alternate disks. Use floppy disk marked A for backing up one day, and then floppy disk marked B the next day, returning to the A disk on the third, and so on.

Before backing up, one must have diskettes that have been previously formatted: either new diskettes or the existing backup diskettes to be updated.

Backup can be done by using the program of the menu COPY OF FILE S which allows to select the histories to be backed up. For instance, it might be necessary to backup on two separate diskettes the data of two institutions that share a computer. The copying instructions are displayed on the screen. The backup program from the menu does not erase eventual files on the backup diskette and it calls for the total number of diskettes needed to make the whole copy. Do not forget to back up all the databases of the system (in the SIA they are ADGENER.DBF, ADPRINC.DBF AND ADVOLU.DBF).

The backup can also be made using the COPY command from the D.O.S operating system:

C:\SIA\>COPY ADGENER.DBF A:<ENTER>

C:\SIA\>COPY ADPRINC.DBF A:<ENTER>

C:\SIA\>COPY ADVOLU.DBF A:<ENTER>

5.8 Completeness Control

The COMPLETENESS CONTROL option shows where information is lacking in the histories. It is, therefore, a tool with which the care put to record health observations can be checked. Select the option on the menu and then specify the period of interest by pressing the F6 key and/or select the cases to be analyzed by pressing F7.

To check that the entered histories have a recorded date, the program is run without specifying any lower date limit so as to include histories with no date or with an incomplete one. The only statistic that this program produces concerns the lack of information. Figure 12 shows an example of COMPLETENESS CONTROL where the lack of information in each one of the groups or sections of the form is specified. Since SIA works with three databases, the program must be run three times, one for each of them.

CLAP-OPS/OMS INFORMATION SYSTEM OF THE ADOLE AD1050 Ver 1.11 2 Oct 95

Name of the User Institution City - COUNTRY

COMPLETENESS CONTROL

DEFINITION OF POPULATION
ADGENER.DBF N = 92 10 Jan 80 - 13 Mar 84

SELECTION BY OTHER VARIABLES (up to 3 groups of 5 conditions)

Selected cases 92

Missing information in the whole of records: 2274 50.4%

Missing information by groups of variables:

Identification.....	748	47.8%			
Personal History.....	1049	57.0%			
Family History.....	477	43.2%			
Hospital or clinic...	0	0.0%	Chart Number.....	0	0.0%
Last Name.....	0	0.0%	First Name.....	0	0.0%
Place of birth.....	35	38.0%	Code Place of birth..	92	100%
Date of birth.....	39	42.4%	Gender.....	1	1.1%
Address.....	11	12.0%	City.....	11	12.0%
Zip Code.....	91	98.9%	Phone.....	90	97.8%
Phone at home.....	91	98.9%	Age when 1st job.....	83	90.2%
Menarche/Ejaculatio..	60	65.2%	Months Menarche/Eja..	85	92.4%
Age 1st Intercourse..	84	91.3%	Smoking Start. Age...	87	94.6%
Alcohol Start. Age...	86	93.5%	Perinatal.....	55	59.8%
Growth.....	53	57.6%	Development.....	55	59.8%
Chronic Diseases.....	41	44.6%	Infectious Diseases..	36	39.1%
Accidents/intoxicat..	44	47.8%	Surgery/Hospitaliza..	39	42.4%
Substance/Med. Use...	25	27.2%	Psychological Probl..	30	32.6%
Complete Immunizati..	32	34.8%	Abuse.....	34	37.0%
Legal Problems.....	32	34.8%	Other It.Pers.Hist...	40	43.5%
Obs.Pers.History.....	48	52.2%	Cardiovascular Fam...	18	19.6%
Infections.....	21	22.8%	Alcohol/drugs Famil..	20	21.7%
Obesity in Family....	26	28.3%	Diabetes in Family...	19	20.7%
Psychologic.Pr.Fam...	22	23.9%	Family Violence.....	31	33.7%
Fam. Legal Problems..	32	34.8%	Other Fam. Problems..	41	44.6%
Observ.Fam.History...	65	70.7%	Code N. Health.Prov..	11	12.0%
Free 1.....	92	100%	Free 2.....	92	100%
Free 3.....	92	100%	Allergy.....	91	98.9%
Adolescent Mother....	91	98.9%			

Comments:_____

_____Signature:_____

Figure 12. Example of COMPLETENESS CONTROL of the general database ADGENER.DBF. Note the dates to which the document alludes (for ADGENER they are the birth dates) and the overall percentage of unregistered information. Note in this example that, for 42.4% of the cases, the birth date was not entered.

The first line shows the name of the program, the date and the period of study desired; then the number of histories entered whose dates are within this period; then the overall percentage of missing information, taking into account all the variables of all the histories of that period. For example, "Unregistered information....1.4%" indicates that 1.4% of the information was not collected.

This figure must be minimized by insisting that staff filling in the forms be aware of missing values. No matter how obvious it seems, the data must be recorded. If there are data that are not obvious, they must be discovered. The concept "lack of a fact" is radically different from "no" or "was not done." So, if the adolescent in question does not drive, the question about driving must contain the answer "NO." This is not the same as the lack of a fact which implies the uncertainty between "THE QUESTION WAS NOT ASKED" and "DOES NOT DRIVE." Then the document details the number and percentage of data not entered for each of the variables. For instance: "WEIGHT 8 0.3%" indicates that, in 8 cases, the WEIGHT was not entered, which represents 0.3% of the cases that ought to have the weight value.

For each one of the sections, the form specifies the percentage of missing data. In this manner, a comparative evaluation can be made of the fulfillment of the task of collecting data in the different phases (antecedents, family, physical examination, etc.). There are a few lines at the bottom of the document for commentaries by the operator; these will be signed and filed along with the data.

5.9 Detection of Inconsistencies

The DETECTION OF INCONSISTENCIES program identifies combinations of values that seem wrong on looking through a history. A height that decreases from one visit to the next or an adolescent who, on the one hand, figures as "illiterate" and, on the other, has 8 school years approved, are data that certainly must be revised.

The program can be run for a set of histories that the operator defines with the F6 or F7 keys as usual. It is convenient to run a DETECTION OF INCONSISTENCIES on recently entered forms while the data are still fresh in the minds of the health team and the charts are accessible to corroborate or modify data.

This program shows the number of the history and follows with the pertinent message/s. The cases with no observations can be listed with no message or omitted as the operator decides. The complete list with cases to be revised and correct cases can serve as a daily summary of the day's work if it is defined with the F6 key.

5.10 A Demonstration Session

In the diskettes distributed by CLAP, data files are created and empty, ready to enter the first cases. To setup a demonstration session, data must be copied onto the disk in the same sub-directory as the programs (C:\SIA generally). This copy can be made with the command:

C>COPY A:FILE.DBF C:\HOSPITAL\SIA

where FILE will be substituted successively by ADGENER.DBF, ADPRINC.DBF and ADVOLU.DBF to install the three bases of the Adolescent Information System.

What follows is a possible sequence for a demonstration session:

ACCESS TO A HISTORY to enter data: With some AdH forms at hand filled in with simulated data, enter these as you answer the questions of the program. Remember the number of the history (for instance 1234) and that of the hospital (for instance 7) for later reference. Alternatively, you can enter all or part of the history given as a teaching example in Chapter 7. Once half a dozen variables have been entered, give the command to save the history, F8, to abbreviate the session and check on the summary of the history. Leave the menu with <ESC>.

ACCESS TO A HISTORY to check or modify data: It is suggested that first you read the history which has just been entered and then change it since data about smoking have been omitted. To access this history, choose first the base (either ADGENER, ADPRINC or ADVOLU) and then type in the number of the history. If you specify the HOSPITAL and the CHART NUMBER, the system will automatically find it. If only the CHART NUMBER or the surname is entered, you will have to press the F3 key labelled "Search" at the bottom of the screen.

COMPLETENESS CONTROL: Run this on the test data to which the history just entered has been added. Note how each variable is checked separately.

DETECTION OF INCONSISTENCIES: Run this program to verify whether the data of the history are consistent. It is enough to specify in F7 the value 1234 for the CHART NUMBER as both the initial value and the final one.

BASIC STATISTICS: Run this program for all the available cases; delete in F7 a condition which might have remained from the previous process. A BASIC STATISTICS of the test data is obtained. Please comment on the characteristics of the population served.

DESCRIPTION OF A VARIABLE: This program builds a histogram of the variable specified by the operator. It is suggested that you call for the two variables which later will fit into the ESTIMATION OF RISK example so that the variables which are to be studied together can be examined separately. You can select, for instance, the variable SMOKING STARTING AGE on the AdH main form and the consumption of OTHER DRUGS. The variable AGE has several options (10,11,12, etc. years) while the consumption of OTHER DRUGS will have only the options YES, NO, and no data.

ESTIMATION OF RISK: It is suggested that you cross the two variables chosen in DESCRIPTION OF A VARIABLE. Here, the hypothesis is that, when the age of smoking initiation is below 14, it is a risk factor for the consumption of OTHER DRUGS. For this specify:

Exposure to risk variable: SMOKING STARTING AGE
Exposure range: Lower limit: 10
Upper limit: 14
Reference: Lower limit: 15
Upper limit: 20

Adverse outcome variable: OTHER DRUGS
Damage range: Lower limit: YES
Upper limit: YES

Reference: Lower limit: NO
Upper limit: NO

The variables are defined by pressing the F4 key. When estimating risks related to coded variables, the codes must be consulted by pressing the F5 key.

The chapter on ESTIMATION OF RISK explains the links between the data in the file. It is suggested that commentaries be made on the significance of these links and the ESTIMATION OF RISK chapter be read to help with the interpretation of the results.

At the end of the demonstration, by means of the <ESC> key, one returns to the operating system. Once the demonstration is over, the test data must be deleted from the file. This can be done either by re-installing the whole system by means of the INSTALL command, which will recopy the empty file, or by choosing the option COPY A FILE which has the option of erasing histories from the file. If the files were erased altogether (for instance with the D.O.S. command DEL ADGENER.DBF), the system would no longer run because it lacks the empty file.

6. STATISTICAL REPORTS

6.1 General Features

This chapter describes the statistical information calculated and displayed by the system. The first type of result, the BASIC STATISTICS, summarizes the population of adolescents. It is obtained by selecting the right option on the menu. This chapter shows how one can obtain a list of cases that fulfill certain conditions either presented in columns of data or as fully edited histories. Finally, one is instructed on how to proceed to analyze the texts which were freely entered: then problems may appear that were not coded in the variables on the form because they dealt with situations which were very local or not considered when proceeding to define the variables.

6.2 Basic Statistics

The BASIC STATISTICS is a set of health indicators of the served population of adolescents. These contain the personal and family histories, the existence of risk factors in each section of the AdH main form. This document will give a quick overview of the situation of the group of adolescents. As in all the other programs, one can select the population by combining any variables and dates. For instance, one can obtain the BASIC STATISTICS of the boys seen during a certain period or the girls born between given years.

To obtain the BASIC STATISTICS, the operator chooses the option on the menu, then specifies the period of interest (F6), and eventually selects the population (F7). The program begins to calculate, displaying a message asking one to wait. The operator can follow the progress of the task by watching the screen where the number of histories being processed appears. The result of the program is of the type shown in Figure 13.

The BASIC STATISTICS report shows the program that generated it and the date in the top right hand corner. After that, the period being studied appears.

PERSONAL HISTORY: The program shows the factor for which a problem was recorded in the personal history and calculates the percentage of the total number of adolescents reporting similar problems. Remember that these problems refer to situations which existed before the present visit of the adolescents.

FAMILY HISTORY: The program shows cases for which a problem was noted in the family history and calculates the percentage of the total number of adolescents reporting similar problems. Such analyses allow an overall view of the sets of problems in the families of the adolescents being served.

PRIMARY TREATMENT: The risk factors detected during AdH main form filling are marked in yellow boxes. Each time a risk option is marked in one of the variables of the group, the program assigns that adolescent to the risk group for that variable. For instance, if there is no water in the home, the risk is assigned to the group of variables HOUSING. In this manner, the problems the adolescent reports are placed in the context of their total health.

Five stages of development were defined in which some social activity is initiated (work, alcohol, etc.) or a given stage of physical development is completed (menarche, ejaculation). For some adolescents, these stages have yet to occur; the BASIC STATISTICS program counts everyone and produces the median of ages shown for each stage of development. The median is the age at which half the individuals **that have that fact reported** have reached it.

6.3 Description of a Variable

The program DESCRIPTION OF A VARIABLE allows the variables to be analyzed one at a time. The statistical analysis includes the graph of distribution, means and standard deviations, the usual percentiles, and the maximum and minimum values. For the coded variables, neither the means nor the standard deviations nor the variation coefficient are studied. Examples of continuous variables are the age and weight while the civil status is a coded variable. The Appendix contains the characteristics of all the variables in the system.

To obtain a DESCRIPTION OF A VARIABLE, select the option on the menu and then specify the period of interest with F6 or the sub-population wanted with F7. Subsequently, define the variable to be studied by selecting F4 to access the list of the variables and select one of them by moving the cursor arrows and fixing it by pressing <ENTER>. To reach a variable quickly, one can type its first letter which will scan the list to the first variable beginning with that letter. For instance, after pressing F4, press the "W" which highlights WEIGHT and makes it easier to reach WORK without having to cover all the variables from A to W.

Once launched, the program displays a message asking one to wait as it accesses the histories.

CLAP-OPS/OMS INFORMATION SYSTEM OF THE ADOLE AD2040 Ver 1.11 2 Oct 95

Name of the User Institution City - COUNTRY

BASIC STATISTICS

DEFINITION OF POPULATION

ADGENER.DBF	N = 92	10 Jan 80 - 13 Mar 84
ADPRINC.DBF	N = 99	02 Jan 94 - 4 Oct 94
ADVOLU.DBF	N = 189	02 Jan 94 - 10 Oct 94

SELECTION BY OTHER VARIABLES — (up to 3 groups of 5 conditions)

Selected cases 92 99 189

PERSONAL HISTORY

Perinatal abnormal	31	33.7%	Surgery/Hospitaliz.	19	20.7%
Growth abnormal	35	38.0%	Substance/Med. Use	11	12.0%
Development abnormal	35	38.0%	Psychological Prob.	4	4.3%
Incompl.Immuniz.	6	6.5%	Abuse	8	8.7%
Chronic Diseases	7	7.6%	Legal Problems	3	3.3%
Infectious Diseases	29	31.5%	Other Problems	1	1.1%
Accidents/Intoxic.	11	12.0%			

FAMILY HISTORY

Diabetes	9	9.8%	Infections	3	3.3%	Adol.Mother.	1	1.1%
Obesity	1	1.1%	Psychol.Pr.	7	7.6%	Legal Probl.	4	4.3%
Cardiov.	35	38.0%	Alcohol/dr.	15	16.3%	Other Probl.	1	1.1%
Allergy	0		Viol.intraf.	5	5.4%			

MILESTONES

Work:	8	8.7%	median of starting age	11 years	1 months
Menarche:	27		median	12 years	11 months
Ejaculation:	4		median	13 years	2 months
1stIntercourse:	7	7.6%	median of starting age	16 years	3 months
Smoking:	4	4.3%	median of starting age	14 years	1 months
Alcohol:	5	5.4%	median of starting age	12 years	4 months

MAIN COMPLAINTS OR EVOLUTIONS:

Median age at first visit 14 years months

Median age at most recent visit 13 years months

At least one risk factor in:

Family	67	75.3%	Habits	37	41.6%
Housing	0		Gynaeco-urology	61	68.5%
Education	37	41.6%	Sexuality	36	40.4%
Work	12	13.5%	Psycho-emotional	1	1.1%
Social Life	55	61.8%	Physical Exam.	67	75.3%

Comments:_____

_____ Signature:_____

Figure 13. Example of BASIC STATISTICS. In this population, 6.5% of the adolescents are not up-to-date with their immunizations. Within the families, the most frequent problem is cardiovascular disease. Of the 8 adolescents who work, half of them were already working at the age of 11 years 1 month (median). In the MAIN TREATMENT, the areas in which risk factors are most often detected are PHYSICAL EXAMINATION, FAMILY and the GYNECOLOGICAL/UROLOGICAL.

The document looks like Figure 11: The first line identifies the system and the date. The period is specified and the number of histories whose dates are between the given limits. Then the chosen variable is found with a line of explanation.

The histogram follows the division of the variables into classes specified in the Appendix. Note that the total number of histories includes those that have no value entered for the variable being studied. The percentages are calculated on the total of cases including those with unknown data. The "number of cases for calculation" is the number of histories that contain valid data and the percentage shows the degree of completeness and representativeness of the histogram. Later on, the first maximum and the first minimum are shown with their corresponding chart number.

If the variable being studied is continuous, what is calculated for the sample presented in the histogram are: the mean, the standard deviation and coefficient of the variation, excluding the cases for which no information was entered. Please remember that the coefficient of variation is obtained by dividing the standard deviation by the mean and expressing the result as a percentage. On another line, the percentiles 10, 25, 50 and 90 are shown for the sample being studied. The 50th percentile is also called the median of the sample. Even if the variable is continuous, the program does not calculate the percentiles if the total number of cases is less than 10.

This report may be printed or saved on a diskette: the F3 will print and the F2 requests a name under which the text is to be saved. The document can be filed and distributed among the staff of the health team so that they can evaluate it, discuss it, and take decisions. If it is on a diskette, it can be included in reports using a word processor.

6.4 Change of a Variable

The program of CHANGE OF A VARIABLE allows the study of how a variable which is registered more than once for each patient changes with time. These variables are found on the C type forms such as the AdH main form or AdH follow up form. Opposed to these variables are the G type (general) with only one value for each patient; in this case, there is no point in studying its change (for example, BIRTH WEIGHT is invariate).

To obtain a document of CHANGE OF A VARIABLE, the operator chooses the option on the menu and defines the variable to be described: This variable must be of the C type, otherwise the program will not continue. After that, the operator defines the range to be shown; for instance, heart rate between 50 and 100 beats per minute. These limits can be chosen within the range of values permitted for each variable; in this case, between 35 and 220 strokes per minute.

Then the time variable is defined. That is a variable that accompanies the variable being studied. For instance, if weight is being studied, the time variable could be age. The range of interest must also be defined for this variable: if it is age, it could be from 10 to 18 years and always taken within the extreme limits of 10 to 24 years.

The F6 and F7 keys allow the selection of the cases to be included in the analysis as in the rest of the programs. The choice of period (F6) refers to the principal date of each form. The choice of variables (F7) can be applied to any combination of variables.

```
CLAP-OPS/OMS INFORMATION SYSTEM OF THE ADOLE AD1060 Ver 1.11  2 Oct 95

Name of the User Institution City - COUNTRY

                    DESCRIPTION OF A VARIABLE

┌ DEFINITION OF POPULATION ──────────────────────────────────────────┐
ADPRINC.DBF   N = 99   02 Jan 94 - 10 Oct 94
└────────────────────────────────────────────────────────────────────┘
┌ SELECTION BY OTHER VARIABLES — (up to 3 groups of 5 conditions) ──┐
Number of co:1   -1
└ Selected cases ..... 79                                          ──┘
┌ VARIABLE: Age ─────────────────────────────────────────────────────┐
Age of Adolescent in years
└────────────────────────────────────────────────────────────────────┘

Values       Cases Percent.
10    -10        5   6.3%|**********
11    -11        8  10.1%|****************
12    -12        6   7.6%|************
13    -13        8  10.1%|****************
14    -14        9  11.4%|******************
15    -15        6   7.6%|************
16    -16        8  10.1%|****************
17    -17       11  13.9%|**********************
18    -18        6   7.6%|************
19    -19        7   8.9%|**************
20    -24        0   0.0%|
no data          5   6.3%|**********

Total           79 100.0%
N.B.: an asterisc corresponds to    0.24 records
Cases with data for calculations:   74    93.7%
1st.min:10          in N.0000036273; 1st.max:19          in N.0000036353
Mean:     14.7 Standard deviation:      2.8  Coeff.of variation:    18.%
p10:      11.0 p25:      12.1  p50:     15.0 p75:      17.0 p90:      18.1

Comments:_____Signature:_____
```

Figure 14. Example of DESCRIPTION OF A VARIABLE. Here what was requested was the description of the variable AGE, registered at the first main visit between January 2nd and October 10th, 1994. Therefore, this deals with the age of first contact with the health institution: minimum age 10 years; and the maximum is 19 with the average being 14.7 years. Note that, in 5 cases, no age was recorded.

The result of the program is a graph where the time variable is on the horizontal axis and the variable being studied is on the vertical axis (Figure 15). The calculation of scale is automatic, based on the range defined by the operator. Each case is represented by a symbol, repeated as many times as there are pairs of values for the time and variable in question. For example, if a patient attends 7 appointments, there will be 7 points on the graph showing his or her Change of weight.

The program counts the cases that fulfill the condition specified (in F6 and F7): if there are over 26, each case is represented by a dot (.). If there are fewer than 26, each case will have a lower case letter from "a" to "z." At the points where two or more cases coincide, the program shows this number between 2 and 9. If 10 or more cases coincide, the program writes an asterisk (*).

If the variable is continuous, it calculates the percentiles 10, 50, and 90 for each interval of the time variable. The 10th percentile is interpolated between the limits of the class which, added to the sum of cases in the lower classes, goes from a value below 10% to one above 10% of the total of cases in the column being studied. The graph shows the percentiles with the symbols "-" for p50, "^" for p10 and "v" for p90.

6.5 Distribution of a Variable

The program DISTRIBUTION OF A VARIABLE presents all the values assumed by a variable and indicates the number of cases there are for each value. This program is similar to DESCRIPTION OF A VARIABLE with the difference that ALL the values are presented and not grouped into classes. This program does not draw a histogram nor does it estimate statistical values such as the mean and the centiles.

To obtain a DISTRIBUTION OF A VARIABLE, the operator chooses the option from the menu and then specifies the period of interest with F6 or the sub-population to be considered with F7. Then the operator defines the variable to be studied by pressing F4 to call up the alphabetical list of variables. One of them is chosen by moving the cursor with the arrow keys and fixing it with the <ENTER> key. To reach a variable quickly, its initial letter can be typed and then the list will scan to the first variable beginning with that letter.

Then the program presents the option of distinguishing some of the values of the variable with the message, "limits of the range (to be analyzed)," and proposes digits spanning the range from the lowest to the highest order in the chosen variable. In the case of AGE, it would be:

Range limit: 1..2

If the operator responds with <ENTER>, the limits suggested by the program are accepted and all the values for AGE will be displayed; if only the position 1 is specified, the ages will be grouped only in tens of years.

This option is useful when one needs to count cases according to the INSTITUTION variable. It can be of interest to have a list of the number of cases according to the subdivision of highest rank (province) not distinguishing between districts, municipalities and institutions to which the patients belong. The result of this program can be given in the order of increasing value of the variable or by increasing number of cases. From this comes the question, "Do you want values ordered according to the number of cases ?" Finally, the program asks whether the assimilation of equivalent values is admitted as, for example, "03" and "3."

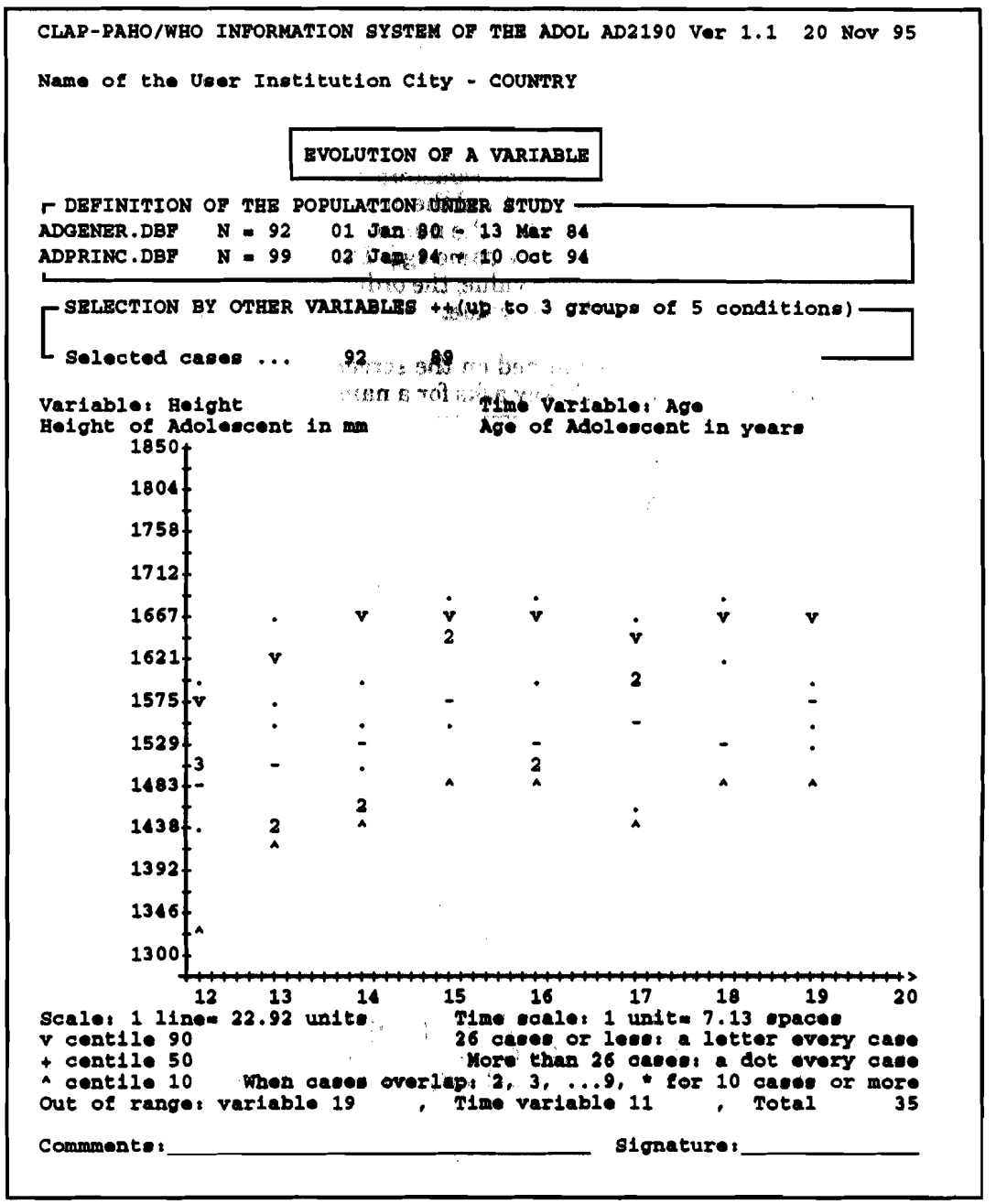


Figure 15. Example of CHANGE OF A VARIABLE. Here the operator chose the height of the adolescents and its Change with age. Since there are more than 26 cases, letters are not used to follow them individually; the number "2" shows that there are two measurements at that point, the dot indicates a single case. The symbol "-" is the 50 percentile for each age. Note that 35 cases are outside the scale (19 for height and 11 for age) and, therefore, are not on this graph.

After confirming these parameters, the program asks one to wait while it examines the histories. The result is like Figure 16: The first line contains the identification of the system and the date on which it was run. The period of study is also indicated as well as the number of histories whose date is within the given limits. After the name of the variable, there is an explanatory line.

The result of the program repeats the parameters chosen by the operator. Then it shows the number of different values found and the mean of cases according to value; for instance, if the variable is AGE, it would be the number of different ages found and the average of the number of individuals of the same age. The rest of the result is the list of values with the number of cases for each value; the order can be either that of the value or of the number of individuals with that value.

This result, after having been examined on the screen, may be printed or saved on diskette; the F3 key prints and the F2 key asks for a name under which to save the text on a diskette.

6.6 Crossing of Two Variables

The CROSSING OF TWO VARIABLES option allows any two variables to be analyzed simultaneously and presents a double entry table. The operator chooses two variables belonging to any of the databases defined in the system. The program constructs the table based on the division into classes of each variable. These divisions into classes are the same ones used by the DESCRIPTION OF A VARIABLE program to construct the histogram. For instance, crossing the CIVIL STATUS variable (4 classes) with the LITERACY variable (2 classes) produces a table with 15 boxes (5 by 3) in which the cases are distributed. Note that each variable has an additional class where the cases with no data are shown. The report obtained is like Figure 17. There the chosen variables appear with their codes if they are coded variables. Following these is the double entry table with the number of cases in each box. The value of chi-squared is shown as well as the degrees of freedom; the level of significance is then reported according to chi-squared tables. The document is limited to 12 classes for the B variable (displayed horizontally) for reasons of space. Should there be more than 12 variables, the presentation in columns is omitted without the totals column losing validity, nor the calculations of chi-squared nor the number of degrees of freedom nor the level of significance either.

This program aims at analyzing together the distribution of cases according to two variables. At times, the multiple subdivisions of each variable makes analysis impractical. In such situations, it is recommended to use the ESTIMATION OF RISK which divides the population into four classes which are clearly defined by the risk and the resulting harm.

6.7 Estimation of Risk

The ESTIMATION OF RISK program tests a hypothesis of association between a risk factor and the harm it is supposed to cause. For instance, in the Adolescent History, main form the registration of REPEATED GRADES different from zero might constitute a risk factor for school DROPOUT. This program allows any two variables to be crossed to evaluate the relative risk and its degree of significance.

```
CLAP-OPS/OMS INFORMATION SYSTEM OF THE ADOLE AD1060 Ver 1.11  2 Oct 95

Name of the User Institution City - COUNTRY

                    DISTRICTION OF A VARIABLE

                                                          Page:    1
 DEFINITION OF POPULATION
ADPRINC.DBF   N = 99   02 Jan 94 - 10 Oct 94

 SELECTION BY OTHER VARIABLES (up to 3 groups of 5 conditions)

 Selected cases .....:  99

 VARIABLE: Age
Age of Adolescent in years

Range of digits or characters to analise: 1..2
Number of different values: 11   Mean Num cases per value:   9.00

Cases Age

    6
    6 10
    8 11
    7 12
   13 13
   14 14
    8 15
   10 16
   11 17
    7 18
    9 19

Comments:_____

_____Signature:_____
```

Figure 16. Example of DISTRIBUTION OF A VARIABLE. The variable asked for here is AGE. 2 digits were chosen to be analyzed. In the total of 92 cases, there are 11 different ages.

The population is divided into two groups: the risk group and the reference group. Having defined a harm, this is generally more frequent among those exposed than among those not exposed (or reference group). The relative risk indicates how many times more probable it is that the exposed group will be affected than the reference group. So a risk factor of 2 shows that the harm is twice as frequent in cases exposed to the risk factor being studied, compared to those not exposed.

The operator chooses a risk factor, defining a variable of exposure and another variable that represents an adverse outcome or harm. The risk variable has a range of increased risk and reference values. For instance, the "exposure to risk" variable could be the number of cigarettes smoked per day; the risk range would be one cigarette or more, while no cigarettes would be the range of reference or no risk. The result variable might be ALCOHOL CONSUMPTION for which the harm range would be defined as drinking more than one liter of beer or its equivalent per week. The NO harm or reference situation is no consumption of alcohol. In this way, the influence of smoking on drinking in the selected population is studied.

The association is not strong as is shown by the low value of chi-squared.

To run the ESTIMATION OF RISK program, choose the option on the menu; one can operate on a subpopulation selected according to date (F6 key) or some combination of variables (F7 key). Then the program asks the operator for the parameters; the risk factor variable and that of the harm and its respective intervals. The sequence to define the parameters before running the program of ESTIMATION OF RISK is the following, using the values in Figure 18.

Risk factor: cigarettes per day	
Range of those exposed:	lower limit: 1
	upper limit: 25
Reference:	lower limit: 0
	upper limit: 0
Adverse outcome: Alcohol per week	
Harm:	lower limit: 1
	upper limit: 30
Reference:	lower limit: 0
	upper limit: 0

The result is of the type of Figure 18. It contains the "exposure to risk" variable and the selected ranges. The "harm" variable is also shown with the ranges of harm and no harm. The frame of 2 by 2 shows the distribution of cases studied in the four categories in accord with the division in two of both variables.

The frequency of the risk factor (f) and the frequency of the harm in the selected population (p) are shown. Then the frequency of the harm in the risk group (p1) and in the NO risk or reference group (p2) is calculated. If these two frequencies were the same, there would be no risk factor since the risk of incurring harm would not change in the case of exposure to the supposed risk. In this case, the RELATIVE RISK is equal to one. If the frequencies of harm are different, their quotient p1/p2 is the relative risk (RR).

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Name of the User Institution City - COUNTRY

TWO VARIABLES TABLE

DEFINITION OF POPULATION
ADPRINC.DBF N = 99 02 Jan 94 - 10 Oct 94

SELECTION BY OTHER VARIABLES (up to 3 groups of 5 conditions)
Selected cases 99

Variable A:	Variable B:
Level educ.father/o	Level educ.mother/o
0 illiterate	0 illiterate
1 incompl.elem.	1 incompl.elem.
2 elementary sc	2 elementary sc
3 high school/t	3 high school/t
4 university/te	4 university/te

B-> A	0 0	1 1	2 2	3 3	4 4	no data	
0							0
0	%	%	%	%	%	%	
1		17	9	7	3	2	38
1	%	17.2%	9.1%	7.07%	3.03%	2.02%	
2		14	11	5	2	2	34
2	%	14.1%	11.1%	5.05%	2.02%	2.02%	
3			10	3	1		14
3	%	%	10.1%	3.03%	1.01%	%	
4				2	2		4
4	%	%	%	2.02%	2.02%	%	
no d		2	1	1		5	9
ata	%	2.02%	1.01%	1.01%	%	5.05%	
		33	31	18	8	9	99

Chi square: chi2=31.3 , Degrees of freedom: 1= 25, p>0.10

Comments:____________________ Signature:____________

Figure 17. Example of CROSSING OF TWO VARIABLES. Here the operator chose the levels of literacy of the mother and father of the adolescent. Taking the variables separately, incompleted elementary is the most frequent level among mothers and fathers. The most frequent combinations are: incomplete elementary with incomplete elementary (17.2%) and incomplete primary for mothers with elementary school for fathers (14.1%).

The relative risk is a statistical parameter and, as such, represents an estimation based on a sample; the estimation has, therefore, a "confidence interval" within which are all the values of relative risk which would be obtained from other samples of the same size. In reality, 95% of the samples of that size taken from a universal population would have a relative risk which falls within the confidence interval. The ESTIMATION OF RISK program calculates this interval whose purpose is to determine whether the hypothesis of association between risk and harm must be rejected or not.

The graph of relative risk locates the risk and its confidence interval with respect to the unit (RR=1) to facilitate its interpretation. If the unit is included in the confidence interval, in some of the samples the RELATIVE RISK would be equal to one which is equivalent to no association. Therefore, there is no association with a significance level of 95%. It is the case of a RR=2.3 with an interval between 0.7 and 4.2 in which case the hypothesis cannot be rejected that the risk is the same with or without a risk factor. On the contrary, if the unit is outside the confidence interval, the hypothesis of equal risk between the group of those exposed and those not exposed is rejected. This is the case for a RR=1.9 with an interval between 1.2 and 3.9 and it is said that a relative risk of 1.9 is different from 1 with a statistical level of significance of 95%. In the example in Figure 18, the confidence interval does not include the unit. The conclusion is that risk of harm for the group of those exposed is different from that of the reference group.

If the risk factor has a low frequency (< 10%) in the population being studied, the "odds ratio" (OR) approximates the relative risk (RR) and is the one which is usually calculated. So a graph is drawn of the OR and its confidence interval to 95% (OR025 and OR975) instead of RR. In the same manner, if the value 1 is included in the confidence interval, one must realize (with a confidence interval of 95%) that the group exposed to the risk and the group not exposed must be the same group. But if the unit is outside the interval, then one must reject the hypothesis that those exposed and those not exposed are at the same risk of presenting the adverse outcome being studied.

Because the operator is able to define the reference range for both the exposure to risk variable and the adverse outcome variable, the study of risk is made by successive approximations, searching for the cut point which signifies an increased risk for the given population. For illustration, taking variables from an AdH form, we begin with more than 1 LITER OF BEER PER WEEK as the risk factor and we observe the RR to the inexistent LIFE PROJECT; then we investigate the point at 2 liters, imagining that 1 liter is not really a risk factor and so on until we find the limit above which for this population the consumption of alcohol is associated with the harm discussed.

Having defined a range of exposure to risk, if we want to take the complement as a reference, we type an asterisk (*) with which the program takes all the cases that are not explicitly exposed. For example, if the risk group are the patients between 16 and 19 years old, and we type * for the group of those not exposed, the patients of from 10 to 15 as well as those above 20 years old will be included.

CLAP PAHO/WHO INFORMATION SYSTEM OF THE ADOLE AD1080 Ver 1.1 3 Oct 95

Name of the User Institution City - COUNTRY

ESTIMATION OF RISK

DEFINITION OF POPULATION
ADPRINC.DBF N = 99 02 Jan 94 - 10 Oct 94

SELECTION BY OTHER VARIABLES (up to 3 groups of 5 conditions)

Selected cases 99

Exposition variable:		Outcome variable:	
Cigarettes per day		Alcohol per week	
Definition of exposed:	1-25	Adverse outcome:	1-30
Reference:	0-0	Reference:	0-0

		ADVERSE OUTCOME YES	ADVERSE OUTCOME NO		TOTAL
EXPOSED	YES	45	9	54	54
	NO	3	40	43	43
	TOTAL	48	49	97/97	
		48	49		97/97

Proportion of exposed f= 55.67 % Frequency of adv.outcome p= 49.48%
Frequency of AO for exposed p1= 83.33 % for non exposed p2= 6.98%
Chi squared ..... chi2= 55.8
Relative risk.....RR= p1/p2= 11.94
95% confidence interval for RR:..... 6.23 to 22.89
Attrib. Risk in the population .....RA=f(RR-1)/(1+f(RR-1)) = 0.86
Odds ratio.....OR= ad/bc= 66.67
95% confidence interval for OR:..... 16.86 to 263.69

1 RR025 RR RR975

N.B.: The confidence interval of the odds ratio was calculated using the test-based formula.

Comments:_____ Signature:_____

Figure 18. Example of ESTIMATION OF RISK. For the 99 adolescents seen between the 2nd of January and the 10th of October, 1994, (97 had values between the set ranges) smoking is associated with the consumption of alcohol with a RELATIVE RISK of 11.94. The smokers are 12 times more likely to be drinkers than those who do not smoke.

6.8 Access to Several Records

This program chooses a set of histories that respond to one simple or complex condition. These histories may be listed in their entirety or be summarized in one line. In this case, the operator selects the variables he or she wants to see displayed.

The ACCESS TO SEVERAL HISTORIES is a search tool for immediate use; for instance, one can call up the histories of adolescents who drink more than a certain quantity of alcohol whose age is below a given limit. One can also get a list of all the histories in which the name is JOHN or all the histories of youngsters under 14 who drive, etc.

To obtain a set of histories, one chooses the option on the menu and selects the population with the F6 and F7 keys. If one accepts the program's suggestion to list the histories, the program prepares a text of as many pages as the cases selected. On each page, there is the SUMMARY OF THE HISTORY of a patient. Remember that figures 9,10 and 11 are examples of histories; with the program ACCESS TO A HISTORY, they can be obtained one at a time whereas here they could be several or none at all if no patient fulfilled the condition demanded. If the text generated by the program fits in the memory of the computer, it will be displayed on the screen. If the text is too long (many cases and, therefore, many pages), the program requests a file name under which to save it on a diskette so that the operator, once out of the system, goes over it and prints it with a word processor or with the D.O.S. command "Print".

If no condition is specified, the system will list all the histories in the file. If it is sufficient to have a list of patients with up to 10 variables each, reject the system's suggestion to have a complete summary generated. In that case, the variables desired must be specified, and among these the NUMBER OF THE HISTORY should always be included. The program reviews the file and lists one line for each patient that fulfills the conditions of F6 and F7.

6.9 Analysis of Texts

The program allows the analysis of words and groups of words which have been entered in the variables of the "text" type. The program displays a list of words in the order of the frequency of their appearance (Figure 19). In this way, it is possible to detect new problems which it is impossible to code *a priori*. The document ANALYSIS OF TEXT lists:

– the words used most often –
– the words used least often –

The words used most often show the usual problems in a freer and broader form than in the coded variables. The least used words are those that contribute information of great value when reviewing etiologies: situations appear which are very infrequent and sometimes are worth remembering and analyzing in detail.

All text analyses face the fact that different words or groups of words have the same meaning. If the synonyms are not somehow assimilated, the analysis of words (or groups of words) will not follow the distribution of the meanings. Words like "work," "employment" and "occupation" can be joined into one concept as far as studying the problems of adolescents, even when each professional in the health team uses different terms for it.

Before the analysis, therefore, a simplification is run based on a lexicon of synonyms. The program has a DICTIONARY OF SYNONYMS which is delivered empty and which must be brought up-to-date by the user based on the local terminology. It is convenient to eliminate from

the statistics words that have no meaning alone such as the prepositions (of, to, for, etc.) and the articles (a, the, etc.): to do this, they are declared synonyms of the simplest chain of characters which is the blank space (e.g., in the phrase, "to work," the system will discard the word, "to," leaving only "work").

```
CLAP-OPS/OMS INFORMATION SYSTEM OF THE ADOLE AD2070 Ver 1.11  3 Oct 95

Name of the User Institution City - COUNTRY

                    ANALYSIS OF TEXT

┌DEFINITION OF POPULATION ──────────────────────────────────────┐
ADGENER.DBF   N = 92   14 Jan 80 - 13 Mar 84
└──────────────────────────────────────────────────────────────┘

┌SELECTION BY OTHER VARIABLES ** (up to 3 groups of 5 conditions) ┐

└Selected cases .....    92                                      ┘

┌DICTIONNRY OF SINONYMS CLAPPRI.DBF ────────────────────────────┐
└Contains     0 principal entries ────────────────────────────┘

  TEXT WAS ANALYSED IN THE FOLLOWING VARIABLES:
  4 - First Name              (ADGENER.DBF)


Words more frequently used: carlos (5), jose (4), alejandro (3),
andrea (3), andres (3), juan (3), maria (3), angelica (2),
carolina (2), cristian (2), elizabeth (2), laura (2), luis (2),
rodrigo (2), silvana (2), solange (2), soledad (2), victor (2),
ximena (2), albertina (1), alberto (1), alejandra (1), ana (1),
analia (1), angela (1), antonio (1), arturo (1), bernarda (1),
carmen (1), claudia (1), claudina (1), cristina (1), daniel (1).


Words less frequently used: yonathan (1), yenny (1), wladimir (1),
viviana (1), veronica (1), valeska (1), valeria (1), trinidad (1),
tamara (1), siboney (1), scarlet (1), roxana (1), rosario (1),
romina (1), romilio (1), raul (1), ramon (1), pincheira (1), paz (1),
paulina (1), paula (1), patricio (1), oriana (1), norma (1),
nelson (1), nadia (1), moises (1), mauricio (1), maritza (1),
mario (1), mariela (1), marianela (1), marcia (1), manuel (1).

N.B.: If you detect words with the same meaning in these lists, please
enter them in the dictionnary and run the program again.


Comments:_____

_____Signature:_____
```

Figure 18. Example of ANALYSIS OF TEXT. Only text variables can be analized with this progarm, such as Observations or Addresses.

To obtain a text analysis, choose the option on the menu. The program gives the option of updating the dictionary of synonyms by suggesting the CLAPPRI.DBF file. In the case of updating the dictionary, the program asks for the name of the PRINCIPAL SYNONYM and after that all the SECONDARY SYNONYMS which are to be assimilated into the principal synonym. Following the example given, the principal synonym would be "work" and the secondary synonyms would be "employment" and "occupation." The program will substitute the secondary synonyms for the principal synonym. The program makes it possible to list the whole DICTIONARY OF SYNONYMS with the usual format of the documents of the system.

If one does not wish to access the updated dictionary, the program asks for the variables which are to be analyzed. The operator requests the list of variables with the F4 key as usual but, in this case, only the variables that contain text will be displayed. The variables like NAME or OBSERVATIONS contain texts while the variables like AGE or DATE OF VISIT naturally do not contain texts and, therefore, they will not be analyzed in this program. Up to 10 text variables can be analyzed at a time; for instance, OBSERVATIONS OF SOCIAL LIFE, OBSERVATIONS OF HABITS and OBSERVATIONS OF WORK on the Adolescent History main form: to end the list of variables, the operator types an extra <ENTER> key and the program begins the analysis.

The program scans the variables of the cases selected and updates a list of words and groups of words showing for each one the number of times it was found. In the case of finding a secondary synonym, it adds it to the count of the corresponding principal synonym. The principal synonym will be used to substitute the others in the results of the text analysis. Once the document of ANALYSIS OF A TEXT has been obtained, it is good practice to enrich the dictionary of synonyms before running the program again. In effect, the first time it is run, many words or groups of words will be found which have little meaning or words with the same meaning. By enriching the dictionary of synonyms, the user improves the quality of the information contained in the ANALYSIS OF A TEXT report. The unwanted words must be specified as synonyms of the empty word.

7. A TEACHING EXAMPLE

Richard H., whose address is 183 High St. in Kingston, appears for the first time on the 12-5-92. The phone number is 903-0121. He was born on Norfolk Island on 10-4-80. Richard came to the appointment with his mother who says he has behavior problems. He is in the 6th grade of elementary school; he had to repeat the 4th grade which coincided with house moving. At school, he fights with his classmates, gets angry with his teachers, is often found not to tell the truth and does not study. At home, he is also aggressive towards his mother with whom he lives. He is the eldest of three children. His mother is 43-years-old; his father is 32; both are Bahamian.

Richard lived with his parents, siblings and grandmother till he was five. At that age, the family lost their home; the children remained with the grandmother and the parents went to a hotel near their work to live. Two years prior to the clinic visit, parents separated, the mother and Richard went to Nassau where they live alone. Mother cleans offices and is paid an hourly wage. Their housing situation has two rooms, electricity and pump water inside the house; the toilet is outside. It is described as substandard. Father lives in Kingston with his mother and two other children.

Richard's mother's pregnancy was uncomplicated. It was a breech delivery. His birth weight was 2900 g and his length was 48 cm. Mother reports that his growth and development were both slow. He had chickenpox at age 2.

Richard complains of having had headaches for a week; this coincided with his discovering that he might have to repeat the 6th grade. The headache is frontal, described as a tight band around his head, and is relieved by resting. He also asks if he is likely to grow any more since he feels he is very short. His mother measures 1.49 m and his father 1.62 m.

The physical examination shows his height to be 126.3 cm, his weight 24.1 kg, HR 75 per minute, blood pressure 90/60 mm of mercury, Tanner 1. His teeth have multiple caries. While short for age, his limb/trunk ratio is normal. The rest of the examination is normal.

On questioning the boy alone, he indicates that his father and grandmother are obese and violent. The father drank and sometimes got drunk. Richard spends much of the day alone, watches TV for as much as six hours a day, plays football with his neighborhood friends for at least two hours a day, but often ends by fighting. He feels rejected. He has breakfast with his mother, lunch wherever he can, and his calorie intake is low for age. He never has had a girlfriend; he indicates that he does not smoke nor does he use drugs. He does not like to be with adults, he trusts nobody, he does not know what he will do in the future, and says he does not care.

Laboratory tests ordered include: haemoglobin, hematocrit, erythrocyte sedimentation rate, BUN and creatinine, blood glucose and urine analysis. Bone age was ordered as was an eye examination.

In addition, information is requested from his teacher to learn her opinion about Richard's learning ability and his behavior. He is advised to see a dentist. He is given advice on normal nutrition.

A month after the first visit, on the 18/6/92, the patient returned with some of the studies completed. Now his weight is 25.3 kg, height 126.7 cm, blood pressure 90/70 mm of mercury, heart rate 70, Tanner 1. All lab results of blood and urine are normal. Bone age is 10.0 years while chronologic age is 12.1 years.

Teacher's report indicates that Richard finds it difficult to integrate with his peers, he is aggressive physically and verbally towards his classmates and his teachers, and does not know boundaries. His learning difficulty is related to his behavior problem. He becomes distracted when he is not interested in the subject. In natural science, in which he is interested, he can concentrate and answer adequately.

An interview with the school psychologist of the team is requested. Psycho-pedagogical information: Richard, 12-years-old, has been living in Nassau for two years. His father alternates between Kingston and Nassau. His mother, 43-years-old, lives in Nassau. Two brothers, 10 and 8 years old, both live in Kingston.

Reason for visit: poor school performance and aggression towards peers and teachers. Mother was hospitalized when Richard was 5-years-old and they lost their home at that time. The grandmother took charge of Teresa's (mother's) three children. After two years, she gave Richard to another woman who made him care for her grandchildren. When Teresa leaves hospital, she is unable to recover all her children. She comes to Nassau with Richard.

Diagnosis: Richard appears younger than his years, he is pleasant, at times he talks like an adult using words more sophisticated than his age. He says he is "frightened of certain things, fear of punishment." He is alert to noises and movements from outside. In his drawings, he shows immaturity, insecurity and disorganization.

Certain things indicate that emotional factors are operative as well as a low tolerance of frustration. His level of achievement, lower than expected, is influenced by repeated neglect, depression, and an environment with little stimulation. Family therapy is advised.

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9. APPENDIX

9.1 Main Complaints

Please write on the AdH Main Form as well as on the AdH Follow-up form the codes that best describe the problems and concerns expressed at the start of the visit. The first two digits are a general classification, while the last two digit give additional details. For instance 2000 is the unspecific code for Urinary and Genital signs and symptons and 2005 is enuresis. This list is found in the file named ADMOTI.DAA.

0100 Health check up (physicals)
- 0101 Puberty physical
- 0102 School physical
- 0103 Sport physical
- 0104 Check up after exposure to infectious contacts
- 0105 Other check up

0200 Body image concerns
- 0201 Short height
- 0202 Excessive Height
- 0203 Weight loss
- 0204 Overweight
- 0205 Concerns with insufficient muscular development
- 0206 Concerns with fatness distribution in the body
- 0207 Concerns with a part of the body
- 0208 Gynecomastia
- 0209 Breast bud
- 0210 Asymmetric breast development
- 0211 Small Breast
- 0212 Small Penis
- 0213 Small Testicles
- 0214 Early puberty
- 0215 Delayed puberty
- 0216 Other body concerns

0300 General symptoms
- 0301 Weakness, fatigue, lack of will
- 0302 Dizziness
- 0303 Short breath
- 0304 Faints
- 0305 Palpitations
- 0306 Other general symptons

0400 Pain
- 0401 Headache
- 0402 Neck and face pain
- 0403 Earache
- 0404 Swallowing pain
- 0405 Eyes pain
- 0406 Chest pain
- 0407 Breast pain
- 0408 Other thoracic pain
- 0409 Back pain
- 0410 Abdominal pain
- 0411 Dysuria
- 0412 Dysmenorrhea
- 0413 Painful menarche
- 0414 Other pain in genitalia
- 0415 Rectal pain
- 0416 Muscular pain
- 0417 Joint pain
- 0418 Bone pain
- 0419 Other pain in any limb
- 0420 Skin pain
- 0421 Other pain

0500 Fever

0600 Eating disorder
- 0601 Dieting
- 0602 Appetite loss
- 0603 Chronic appetite loss
- 0604 Weight loss
- 0605 Excessive appetite
- 0606 Excessive eating

0607 Thirst increase
0608 Other eating disorder
0700 Trauma, accidents
0701 Luxations, sprains, strains
0702 fracture
0703 wound
0704 burns
0705 intoxication
0706 Other trauma
0800 Learning Problems
0900 Problems of Conduct
1000 Family Problems
1100 Emotional/Mental Problems
1200 Sleep Problemas
1201 insomnium
1202 sonambulism
1203 somnolence
1204 other sleep problem
1300 Drugs and alcohol abuse
1400 Visible tumors
1401 Neck and face tumors
1402 Thorax tumors
1403 Breast tumors
1404 Abdominal tumors
1405 Tumors in extremities
1406 Tumors in articulations
1407 Tumors in genitalia
1408 Other tumors
1500 Vascular signs and symptoms
1501 Leg veins dilatation
1502 Edema
1503 Cyanosis
1504 Other vascular signs
1600 Eyes symptoms and signs
1601 Itching
1602 Watering eye
1603 Eye discharge
1604 Eye congestion
1605 Gradual vision loss
1606 Double vision
1607 Other eye symptoms
1700 Hearing signs and symptoms and speech disorders
1701 Hearing loss
1702 Buzzing
1703 Stutter
1704 Pronuciation disorder
1705 Other hearing and speech disorders
1800 Respiratory signs and symptoms
1801 Upper Airway Symptoms
1803 Nasal obstruction
1804 Voice loss, laryngitis
1805 Cough
1806 Dyspnea
1807 Other respiratory signs
1900 Gastrointestinal (GI) symptoms and signs
1901 Nausea
1902 Vomiting
1903 Diarrhea
1904 Constipation
1905 Abdominal distension
1906 Anal itching
1907 Parasites in stools
1908 Blood in stools
1909 Anal incontinence
1910 Encopresis
1911 Lips and oral problems
1912 Other GI symptoms
2000 Urinary and genital signs and symptoms
2001 Polyuria
2002 Decreased diuresis
2003 Hematuria
2004 Urinary incontinence
2005 Enuresis
2006 Discharge from nipples
2007 Itching nipples
2008 Absence of one or both testicles
2009 Vaginal discharge
2010 Other discharge from genitalia
2011 Perineal itching
2012 Primary amenorrhea
2013 Secondary amenorrhea
2014 Metrorrhagia
2015 Polymenorrhea
2016 Oligomenorrhea
2017 Hypermenorrhea
2018 Hypomenorrhea
2019 Impotent
2020 Lack of sexual desire
2021 Absence of ejaculation
2022 Sterility
2023 Abortion
2024 Pregnancy
2025 Delivery
2026 Sexual abuse
2027 Other Urinary/Gynecol
2100 Skin, hair, nails signs and symptoms
2101 Itching
2102 Dermatitis
2103 Nevus
2104 Pale skin
2105 Secretion
2106 Sweating
2107 Nail problems
2108 Hair Loss
2109 Hirsutism
2110 Other Dermatologic Signs
2200 Bone and joint signs and symptoms
2201 Abnormalities in body habitus/posture
2202 Functional impairment
2203 Walking abnormalities
2204 Malformations
2205 Other Bone and Joint Signs
2300 Neurological symptoms and signs
2301 Delayed cognitive development
2302 Mental Retardation
2303 Loss of consciousness
2304 Seizures
2305 Tremor
2306 Other involuntary movement
2307 Taking neurological medications
2308 Other Neurological Problem
2400 Looking for orientation
2401 Nutrition Orientation
2402 Physical activity Orientation
2403 Free time Orientation
2404 Vocational advise Orientation
2405 Puberty development Orientation
2406 Onset of sexual intercourse Orientation
2407 Contraception Orientation
2408 Sexual orientation concerns
2409 Immunizations Orientation
2410 Other Orientation Seeking
2500 Check up due to previous illness
2600 Visit due to unknown reasons
2700 Visit due to other reasons

9.2 Classification of Diseases

Please enter the codes which best describe the diagnoses in the appropiate spaces in both the AdH Main form and the AdH follow-up form. This list is available in the file ADENFE.DAA.

0100 Infectious Diseases and Parasitic Infections
- 0101 Bacterial and Parasitic Infections
- 0102 Tuberculosis
- 0103 Streptococcal Pharyngitis
- 0104 Other Infectious Diseases
- 0105 Viral Hepatitis
- 0106 Infectious Mononucleosis
- 0107 HIV/AIDS Infection
- 0108 Other Viral Infections
- 0109 Sexually Transmitted Diseases
- 0110 Other Infectious Disease or Parasitic Infect.

0200 Malignant or Benign Tumors
- 0201 Hodgkin's Disease
- 0202 Other Lymphoma
- 0203 Leukemia
- 0204 Other Malignant Tumor
- 0205 Other Benign Tumor

0300 Endocrine, Metabolic, Nutritional and Immunologic Disorders
- 0301 Thyroid Disorders
- 0302 Pituitary Gland Disorders
- 0303 Diabetes Mellitus
- 0304 Hyperproteinemias
- 0305 Obesity
- 0306 Other Nutr Disorder (anorexia, bulimia)
- 0307 Other Immune Disease
- 0308 Other Endocrine, Metabolic or Nutritional Disorder

0400 Hematological Diseases
- 0401 Anemia
- 0402 Coagulation Disorders
- 0403 Other Hematological Disease

0500 Mental and emotional disorders
- 0501 Mental Retardation
- 0502 Learning Disorders
- 0503 Autism
- 0504 Behavioral Problems
- 0505 Anorexia nervosa
- 0506 Bulimia nervosa
- 0507 Other Nutritional Disorder
- 0508 Sexual Orientation Problems
- 0509 Tic
- 0510 Encopresis
- 0511 Enuresis
- 0512 Speech Disorders
- 0513 Alcohol Abuse
- 0514 Drugs or Substance consumption
- 0515 Psychosis
- 0516 Depression
- 0517 Anxiety
- 0518 Conversion Disorders
- 0519 Sexual Dysfunction
- 0520 Sleep Disorders
- 0521 Other Neurotic Disorders or Personality Alt.
- 0522 Psychosocial Stress due to Family Dysfunc.
- 0523 Other Parental Relationship Problems
- 0524 Psychosocial Stress due to Work Problems
- 0525 Physical abuse
- 0526 Sexual Abuse
- 0527 Other Mental or Emotional Disorder

0600 Neurological diseases
- 0601 Meningitis
- 0602 Epilepsy
- 0604 Migraine Headache
- 0605 Other Neurological Disease

0700 Eyes and Ears Diseases
- 0701 Eyes and Vision Diseases
- 0702 Otitis
- 0703 Deafness
- 0704 Other Disease of the Ears and Adjacent Organs

0800 Cardiovascular diseases
- 0801 Hypertension
- 0802 Cardiac Disease
- 0803 Peripheral Vascular Disease
- 0804 Other Cardiovascular Disease

0900 Respiratory Diseases
- 0901 Pharyngitis
- 0902 Upper respiratory infections
- 0903 Allergic sinusitis
- 0904 Bronchitis
- 0905 Pneumonia
- 0906 Influenza
- 0907 Asthma
- 0908 Other Respiratory Disease

1000 Facial and Oral Diseases
- 1001 Dental Health Problems
- 1002 Parotid Glands Disorders
- 1003 Maxillary Disorders
- 1004 Other Facial and Oral Diseases

1100 GI Diseases
- 1101 Peptic or Duodenal Ulcer
- 1102 Apendicitis
- 1103 Constipation
- 1104 Other GI Disease

1200 Urinary and Renal Diseases
- 1201 Renal Infections
- 1202 Cystitis
- 1203 Other Urinary and Renal Diseases

1300 Male Genitalia Diseases
- 1301 Hydrocele
- 1302 Undescended Testicle
- 1303 Varicocele
- 1304 Phimosis
- 1305 Other Male Genitalia Disease

1400 Female Genitalia Diseases
- 1401 Breast Disease
- 1402 Pelvic Inflammatory Disease (PID), Vaginitis, Vulvitis
- 1403 Dysmenorrhea
- 1404 Menstrual Disorders
- 1405 Other Female Genitalia Disease

1500 Pregnancy and of pregnancy, labor, delivery and postpartum complications

1600 Skin Problems
- 1601 Acne
- 1602 Skin Infections
- 1603 Other Skin Problems

1700 Bone and Soft Tissue Diseases
- 1701 Scoliosis
- 1702 Asymmetry of Inferior Limbs
- 1703 Other Spine Disease
- 1704 Non Rheumatic Arthritis
- 1705 Rheumatic Fever
- 1706 Rheumatoid Arthritis

1707 Disseminated Lupus eritematosus
1708 Other Soft Tissue Disease
1709 Other Bone Disease
1800 Congenital Anomalies
1801 Cardiac Malformations
1802 Other Congenital Anomaly
1900 Non Specified Symptoms and Signs
1901 Prolong Febrile Syndrome
1902 Loss of Consciousness
1903 Other Cardiac Symptom
1904 Stress Headache
1905 Abdominal Pain
1906 Thoracic Pain
1907 Ribs Pain
1908 Inferior Limbs Pain
1909 Other Inespecific Pain
2000 Trauma
2001 Fractures
2002 Luxations or Sprains
2003 Other Injuries or Trauma
2100 Burns
2200 Unintentional Poisoning
2300 Familiar Delayed Puberty
2400 Low Family Height
2500 Healthy Adolescent
2600 Other Diagnosis

9.3 Treatment and Referrals

This list is available in file ADINTE.DAA

00 No Prescriptions nor Referrals
01 Referral
02 Advice on General Topics
03 Orientation on Growth and Development
04 Orientation on Nutrition Habits
05 Orientation on Sexual Topics
06 Orientation on Other Topics
07 Antibiotics, antifungals, antiparasitics
08 Antidepressants, sedatives, antiepileptic agents
09 Pain and fever suppressants and anti-inflammatory agents
10 Other specific medication
11 Psycotherapy
12 Laboratory tests ordered
13 External Referral suggested to

9.4 General Base Variables ADGENER.DBF data base

1 Hospital or clinic 0000000 - 9999999
Enter the Hospital or Clinic Code Number
2 Chart Number 0000000000 - 9999999999
Number of Clinical Chart of the Adolesce
3 Last Name A - Z
Last Name of Adolescent
4 First Name A - Z
First Name of adolescent
5 Place of birth A - Z
Name of town where Adolescent was born
6 Code Place of birth 0000000 - 9999999
Code Number of the Institution where Ado
7 Date of birth 01/01/73 - 31/12/99
In DAY/MONTH/YEAR format
8 Gender 1 - 2
Specify the Gender of Adolescent
1 Female 2 Male
9 Address A - Z
Street and Number of Adolescent
10 City A - Z
City of the Address of the Adolescent
11 Zip Code 1 - 99999
Zip Code of Address of Adolescent
12 Phone 0-9999999999
Adolescent Phone Number (0=does not have
13 Phone at home 0 - 1
Say whether Phone is only to leave messa
0 Only for messages 1 Phone at home
14 Age when 1st job 0 - 24
In years (0=did not start working yet)
15 Menarche/Ejaculatio 0 - 24
n years (0=not yet)
16 Months Menarche/Eja 0 - 11
Tip of age in months of menarche/ejacula
17 Age 1st Intercourse 0 - 24
In years (0=no Intercourse yet)
18 Smoking Start. Age 0 - 24
In years (0=never smoked)
19 Alcohol Start. Age 0 - 24
In years (0=never had alcohol)
20 Perinatal 0 - 2
Normal Perinatal History
0 normal 1 abnormal
2 don't know
21 Growth 0 - 2
Normal Growth
0 normal 1 abnormal
2 don't know
22 Development 0 - 2
Normal Development
0 normal 1 abnormal
2 don't know
23 Chronic Diseases 0 - 1
History of Chronic Diseases
0 no 1 yes
2 don't know
24 Infectious Diseases 0 - 2
History of Infectious Diseases
0 no 1 yes
2 don't know
25 Accidents/intoxicat 0 - 2
History of Accidents or intoxications
0 no 1 yes
2 don't know
26 Surgery/Hospitaliza 0 - 2
History of Mayor Surgery
0 no 1 yes
2 don't know
27 Substance/Med. Use 0 - 2
Hsitory of Use of Substances or Medicine
0 no 1 yes
2 don't know
28 Psychological Probl 0 - 2
History of Psychological Problems
0 no 1 yes
2 don't know
29 Complete Immunizati 0 - 2
Say whether Adolescent has had all immun
0 complete 1 incomplete
2 don't know
30 Abuse 0 - 2
Was she/he abandned or abused
0 no 1 yes
2 don't know
31 Legal Problems 0 - 2
History of Legal Problems
0 no 1 yes
2 don't know

32 Other It.Pers.Hist. 0 - 1
Any other items of Personal History ?
0 no 1 yes
33 Obs.Pers.History A - Z
Observations on Personal History
34 Cardiovascular Fam 0 - 2
Family History of Cardiovascular Disease
0 no 1 yes
2 don't know
35 Infections 0 - 2
Family History of Infections (TBC HIV et
0 no 1 yes
2 don't know
36 Alcohol/drugs Famil 0 - 2
Family History of Alcohol/drugs
0 no 1 yes
2 don't know
37 Obesity in Family 0 - 2
Family History of Obesity
0 no 1 yes
2 don't know
38 Diabetes in Family 0 - 2
Family History of Diabetes
0 no 1 yes
2 don't know
39 Psychologic.Pr.Fam. 0 - 2
Family History of Psychological Problems
0 no 1 yes
2 don't know
40 Family Violence 0 - 2
Violence within the Family
0 no 1 yes
2 don't know
41 Fam. Legal Problems 0 - 2
Family History of Legal Problems
0 no 1 yes
2 don't know
42 Other Fam. Problems 0 - 1
Other Family History Problems not listed
0 no 1 yes
43 Observ.Fam.History A - Z
Observations on Family History
44 Code N. Health.Prov 0000 - 9999
Code Number of Health Provider
45 Free 1 0000 - 9999
To be defined locally
46 Free 2 0000 - 9999
To be defined locally
47 Free 3 0000 - 9999
To be defined locally
48 Allergy 0 - 2
Family History of Allergy
0 no 1 yes
2 don't know
49 Adolescent Mother 0 - 2
Family History of Adolescent Motherhood
0 no 1 yes
2 don't know

9.5 Main complaint variables. ADPRINC.DBF data base.

1 Hospital or Clinic 0000000 - 9999999
Use the code number assigned to this Ins
2 Chart number 0000000000 - 9999999999
Number of Clinical Chart of this Adolesc
3 Number of complaint 1 - 99
Number of main complaint
4 Date main complaint 01/01/92 - 31/12/13
Date in DAY/MONTH/YEAR format
5 Age 10 - 24
Age of Adolescent in years
6 Marital status 1 - 3
Marital status of Adolescent
1 single 2 stable link
3 separated
7 Accompanying Person 1 - 8
Who came with Adolescent to the Clinic ?
1 alone 2 mother
3 father 4 both
5 partner 6 friend
7 relative 8 others
8 Date Last Menstruat 01/01/92 - 31/12/13
1st. day Last Menstruation (dd/mm/aa)
9 Weight 200 - 1200
Weight of Adolescent in hg.(hectograms i
10 Height 1200 - 1999
Height of Adolescent in mm (i.e. 1520 fo
11 Systolic pressure 70 - 220
Systolic Pressure in mm Hg
12 Diastolic pressure 40 - 160
Diastolic Pressure in mm Hg
13 Heart Rate 35 - 220
Heart rate (in beats per minute)
14 Tanner breasts 0 - 5
Stage of Breasts Development (Tanner, 0
15 Tanner Pubic Hair 1 - 5
Stage of Pubic Hair Development (Tanner)
16 Tanner Genitalia 0 - 5
Stage of Development of Genitalia (0 for
17 Accord. to adol. 1 A - Z
1st. Complaint according to Adolescent
18 Accord. to adol. 2 A - Z
2nd. Complaint according to Adolescent
19 Accord. to adol. 2 A - Z
3rd. Complaint according to Adolescent
20 Accord. to accom. 1 A - Z
1st. Complaint according to Accompanying
21 Accord. to accom. 2 A - Z
2nd. Complaint according to Accompanying
22 Accord. to accom. 3 A - Z
3rd. Complaint according to Accompanying
23 Important observ. 1 A - Z
Observations on Complaints
24 Reasons to Work 0 - 4
0 economic 1 independence
2 I like it 3 other
4 n/a
25 General Diagnosis A - Z
General Diagnosis on this Complaint
26 Treatment 1 A - Z
Treatment indicated during this Complain
27 Cod.health provider 0000 - 9999
Code of Health Provider
28 Family perception 1 - 4
How does Adolescent perceive Family Rela
1 good 2 regular
3 bad 4 no relationship
29 Needs information 0 - 1
Does Adolescent need information on sexu
0 no 1 yes
30 Kind job father/oth 0 - 2
Kind of Job of father or person in charg
0 none 1 unstable
2 stable
31 Kind job mother/oth 0 - 2
Kind of Job of mother or person in charg
0 none 1 unstable
2 stable

32 Level educ.father/o 0 - 4
Level of Educ. of father or other person
0 illiterate 1 incompl.elem.school
2 elementary school 3 high school/technic
4 university/tertiary

33 Legal employment 0 - 2
Is Job done in legal conditions ?
0 no 1 yes
2 n/a

34 Level educ.mother/o 0 - 4
Level of Educ. of mother or other person
0 illiterate 1 incompl.elem.school
2 elementary school 3 high school/technic
4 university/tertiary

35 Lives with mother 0 - 2
Does Adolescent live with his/her mother
0 no 1 at home
2 in same room

36 Lives with father 0 - 2
Does Adolescent live with his/her father
0 no 1 at home
2 in same room

37 Lives w/stepmother 0 - 2
Does Adolescent live with his/her stepmo
0 no 1 at home
2 in same room

38 Lives w/stepfather 0 - 2
Does Adolescent live with his/her stepfa
0 no 1 at home
2 in same room

39 Lives wiht siblings 0 - 2
Does Adolescent live with his/her siblin
0 no 1 at home
2 in same room

40 Lives with partner 0 - 2
Does Adolescent live with his/her partne
0 no 1 at home
2 in same room

41 Lives son/daugther 0 - 2
Does Adolescent live with his/her son/da
0 no 1 at home
2 in same room

42 Lives w.other famil 0 - 2
Does Adolescent live with other family m
0 no 1 at home
2 in same room

43 Lives w.others 0 - 2
Does Adolescent live with other persons
0 no 1 at home
2 in same room

44 Lives Institution 0 - 1
0 no 1 yes

45 Lives in the street 0 - 1
Is the Adolescent a Homeless ?
0 no 1 yes

46 Shares the bed 0 - 1
0 no 1 yes

47 Obs. Family (1) A - Z
Gen. Comments on Family (1)

48 Studies 0 - 1
Does Adolescent go to some school ?
0 no 1 yes

49 Level 0 - 3
Level reached as of date of this visit
0 illiterate 1 elementary school
2 high school 3 university/tertiary

50 Years approved 0 - 15
Years of schooling since first elementar

51 Grade 0 - 12
Grade attended presently by Adolescent

52 Problems at School 0 - 2
Any Problems at School ?
0 no 1 yes
2 n/a

53 Repeat grades 0 - 9
Repeat grades since first year of elemen

54 Repeat gr.due to A - Z
Direct or Indirect Causes of repeat grad

55 Drop out 0 - 1
Any Dropouts with or without return to S
0 no 1 yes

56 Drop out due to A - Z
Direct or Indirect Causes of Drop Outs

57 Informal Education 0 - 1
Informal Education Apprenticeships or Ot
0 no 1 yes

58 Obs. on Education A - Z
Gen. Observations on Education

59 Activity 0 - 3
Do not include occasional jobs
0 works 1 no and not seeking
2 looks for 1st. time 3 unemployed

60 Hours per week 0 - 99
Hs. of work per week (0=does not work)

61 Work schedule 0 - 5
0 morning 1 afternoon
2 weekends 3 full time
4 night 5 n/a

62 Kind of job A - Z
Please describe the job of Adolescent

63 Observation on work A - Z
Gen. Observations on Work

64 Acceptation in soci 0 - 3
Level of acceptation in social life
0 accepted 1 ignored
2 rejected 3 don't know

65 Girl/boyfriend 0 - 1
0 no 1 yes

66 Friends 0 - 1
0 no 1 yes

67 Group activity 0 - 1
0 no 1 yes

68 Kind of Activity A - Z
Describe any other activities of Adolesc

69 Hours of Sports 0 - 40
Hours of Sport or Physical education per

70 Hours of TV per day 0 - 16

71 Other activities? 0 - 1
Any other activities ?
0 no 1 yes

72 Obs. on social life A - Z
General Observations on Social Life

73 Age 1st.intercourse 0 - 24
In years (0=had no sexual intercourse ye

74 Sleeps normally 0 - 1
0 no 1 yes

75 Adequate nutrition 0 - 1
Does Adolescent have an adequate nutriti
0 no 1 si

76 Meals per day 0 - 9
Number of Meals taken per day

77 Meals/day w/family 0 - 9
Number of Meals taken per day with Famil

78 D.L.M. exists ? 0 - 2
Say whether LMP is known or applicable
0 exists 1 unknown
2 n/a

79 Cigarettes per day 0 - 99
Number of cigarrettes smoken per day

80 Alcohol per week 0 - 99
Estimate the equivalent of Alcohol in li
81 Other drugs? 0 - 1
Is there use of any other drugs ?
0 no 1 yes
82 Kind and frecuency A - Z
Kind and frequency of intake of other dr
83 Observ. on Habits A - Z
General Observations on Habits
84 Regular cycles 0 - 2
Does the Female Adolescent have regular
0 no 1 yes
2 n/a
85 Dysmenorrhea 0 - 2
0 no 1 yes
2 n/a
86 Anrl.disch./pen.sec 0 - 2
Abnormal discharge or peneal secretion
0 no 1 yes
2 n/a
87 Sexual Intercourse 0 - 3
Define the kind of usual sexual intercou
0 no 1 hetero
2 homo 3 both
88 Troubles w/intercrs 0 - 2
Any problems related with sexual interco
0 no 1 yes
2 n/a
89 Contraception 0 - 3
Does Adolescent use any Contraception Me
0 always 1 sometimes
2 never 3 n/a
90 Condom use 0 - 3
Does Adolescent use specifically a condo
0 always 1 sometimes
2 never 3 n/a
91 Pregnancies 0 - 9
Pregnancies of Adolescent or his Partner
92 Children 0 - 9
Children of Adolescent or his Partner
93 Abortions 0 - 9
Abortions of Adolescent or his Partner
94 Sex.Transm.Diseases 0 - 1
Any Sexually Transmitted Diseases (STM)
0 no 1 yes
95 Sexual abuse 0 - 1
0 no 1 yes
96 Observ. sexuality A - Z
General Observations on Sexuality
97 General 0 - 1
General Evaluation of Physical Exam
0 normal 1 abnormal
98 Skin 0 - 1
0 normal 1 abnormal
99 Head 0 - 1
0 normal 1 abnormal
100 Vision 0 - 1
0 normal 1 abnormal
101 Hearing 0 - 1
0 normal 1 abnormal
102 Mouth and Teeth 0 - 1
0 normal 1 abnormal
103 Neck and thyroid 0 - 1
0 normal 1 abnormal
104 Thorax and Breasts 0 - 1
0 normal 1 abnormal
105 Heart and Lungs 0 - 1
0 normal 1 abnormal
106 Abdomen 0 - 1
0 normal 1 abnormal
107 Spine 0 - 1
0 normal 1 abnormal
108 Genital/urinary 0 - 1
0 normal 1 abnormal
109 Limbs 0 - 1
0 normal 1 abnormal
110 Neurologic system 0 - 1
0 normal 1 abnormal
111 Obs.physic.exam A - Z
General Observations on Physical Exam
112 Code Health Provide 0000 - 9999
Code of Responsible Health Provider
113 Free 1 0000 - 9999
To be defined locally
114 Free 2 0000 - 9999
To be defined locally
115 Free 3 0000 - 9999
To be defined locally
116 Centile Weight/Age 1 - 99
Centile of Weight for the Age of Adolesc
117 Centile Height/Age 1 - 99
Centile of Height for the Age of Adolesc
118 Centile Weight/Heig 1 - 99
Centile of Weight for the Height of Adol
119 Date next visit 01/01/92 - 31/12/13
Date of next Visit (dd/mm/aa)
120 Test.Volume Right 0 - 30
In cm3 (0=female)
121 Test.Volume Left 0 - 30
In cm3 (0=female)
122 Electric energy 0 - 1
Is there Electricity at Home of Adolesce
0 no 1 yes
123 Water 0 - 1
Where is water obtained at home ?
0 inside 1 outside
124 Septic system 0 - 1
Where is the Septic System located at ho
0 inside 1 outside
125 Number of Rooms 0 - 12
Number of Rooms at Home excluding bathro
126 Observ. on Housing A - Z
General Observations on Housing
127 Occup.parents/guard A - Z
Occupation of PArents or Guardians
128 Lives alone 0 - 1
0 no 1 yes
129 Code accord.Adol.1 0 - 2799
Code of Complaint according to Adolescen
130 Code accord.Adol.2 0 - 2799
Code of Complaint according to Adolescen
131 Code Accord.adol.3 0 - 2799
Code of Complaint according to Adolescen
132 Cod.accord.accomp.1 0 - 2799
Code of Complaint according to Accompany
133 Cod.accord.accomp.2 0 - 2799
Code of Complaint according to Accompany
134 Cod.accord.accomp.3 0 - 2799
Code of Complaint according to Accompany
135 Kind informal edu. A - Z
Description of Informal Education receiv
136 Age when 1st. job 0 - 24
(0=never worked)
137 Smoking start. age 0 - 24
In years (0=never smoked)
138 Kind of vehicle A - Z
What kind of Vehicle does the Adolescent
139 Driving 0 - 1
Does the Adolescent drive ?
0 no 1 yes

140 Unsafe work.environ 0 - 2
Unsafe Working Environment
0 no 1 yes
2 n/a

141 Alcohol start. age 0 - 24
In years (0=never drank alcohol)

142 Obs.gynaeco-urology A - Z
General Observations on Gynaecology and

143 Obs. psycho-emotion A - Z
General Observations on Pshycho-emotiona

144 Years menarc/ejacul 0 - 24
In years (0=did not accur yet)

145 Months menarc/ejacu 0 - 11
Months over the years of Menarche/Ejacul

146 Body image 0 - 2
0 feels good 1 feels worried
2 affect.relationship

147 Self Perception 0 - 4
0 happy 1 sad
2 nervous 3 very shy
4 other

148 Significant Adult 0 - 4
0 mother 1 father
2 other relative 3 outside home
4 none

149 Life Perspectives 0 - 2
0 clear 1 confuse
2 absent

150 Day of the week 1 - 7
1 Monday 2 Tuesday
3 Wednesday 4 Thursday
5 Friday 6 Saturday
7 Sunday

151 Partner 0 - 2
0 one only 1 muliple partners
2 n/a

152 Age tip in months 0 - 11
Months over the years of age

153 Important observ. 2 A - Z
Relevant Observations on the Visit 1

154 Important observ. 2 A - Z
Relevant Observations on the Visit 2

155 Obs. on Family 2 A - Z
General Observations on Family 2

156 Gral. Diagnosis 2 A - Z
General Diagnosis of this Visit 2

157 Treatment 2 A - Z
Treatments Recommended during this Visit

158 Obs.Physical Exam 2 A - Z
General Observations on Physical Exam 2

159 Type of STD A - Z
Type of Sexually Transmitted Disease

160 Perinatal History 0 - 2
Was the Perinatal History normal ?
0 normal 1 abnormal
2 don't know

161 Growth 0 - 2
Was Growth normal ?
0 normal 1 abnormal
2 don't know

162 Development 0 - 2
Was Development normal ?
0 normal 1 abnormal
2 don't know

163 Chronic Diseases 0 - 1
History of Chronic Diseases
0 no 1 yes
2 don't know

164 Infectious Diseases 0 - 2
History of Infectious Diseases
0 no 1 yes
2 don't know

165 Accidents/intoxicat 0 - 2
History of Accidents or Intoxications
0 no 1 yes
2 don't know

166 Surgery/hospitaliza 0 - 2
History of Major Surgery or Hospitalizat
0 no 1 yes
2 don't know

167 Medicines or subst. 0 - 2
History of Use of Medicines or Substance
0 no 1 yes
2 don't know

168 Psycholog. problems 0 - 2
History of Psychological Problems
0 no 1 yes
2 don't know

169 Complete immunizat. 0 - 2
Say whether Adolescent is completely imm
0 complete 1 incomplete
2 don't know

170 Abuse 0 - 2
Was he/she an Abandoned or Abused Child
0 no 1 yes
2 don't know

171 Legal problems 0 - 2
History of Legal Problems of the Adolesc
0 no 1 yes
2 don't know

172 Other Pers. History 0 - 1
Any other Relevant Items of Personal His
0 no 1 yes

173 Obs.Pers. History 1 A - Z
General Observations on Personal History

174 Obs.Pers. History 2 A - Z
General Observations on Personal History

175 Cardiovasc. disease 0 - 2
Family History of Cardiovascular Disease
0 no 1 yes
2 don't know

176 Infections 0 - 2
Family History of Infections (TBC, HIV,e
0 no 1 yes
2 don't know

177 Alcohol/drugs famil 0 - 2
Family History of alcohol/drugs
0 no 1 yes
2 don't know

178 Obesity Family 0 - 2
Family History of Obesity
0 no 1 yes
2 don't know

179 Diabetes Family 0 - 2
Family History of Diabetes
0 no 1 yes
2 don't know

180 Psycholog. problems 0 - 2
Family History of Psychological Problems
0 no 1 yes
2 don't know

181 Family Violence 0 - 2
Violence within the Family
0 no 1 yes
2 don't know

182 Legal Problems Fam. 0 - 2
Family History of Legal Problems
0 no 1 yes
2 don't know

183 Others family hist. 0 - 1
Other Familiy History Items
0 no 1 yes
184 Obs.Family History1 A - Z
General Observations on Family History 1
185 Obs.Family History2 A - Z
General Observations on Family History 2
186 Siblings at home 0 - 9
Brothers and Sisters at Home
187 Siblings in room 0 - 9
Brothers and Sisters sharing the same Ro
188 Sons/daught.at Home 0 - 9
Sons or daughters of the Adolescent at H
189 Sons/daught.in Room 0 - 9
Sons or daughters of the Adolescent shar
190 Others at Home 0 - 9
191 Others in Room 0 - 9
192 Allergy 0 - 2
Family History of Allergy
0 no 1 yes
2 don't know
193 Adolescent Mothers 0 - 2
Family History of Adolescent Mothers
0 no 1 yes
2 don't know
194 Code Diagnosis 1 0 - 9999
Code 1 of Diagnosis
195 Code Diagnosis 2 0 - 9999
Code 2 of Diagnosis
196 Code Diagnosis 3 0 - 9999
Code 3 of Diagnosis
197 Code Treatment 1 0 - 99
Code 1 of Treatment
198 Code Treatment 2 0 - 99
Code 2 of Treatment
199 Code Treatment 3 0 - 99
Code 3 of Treatment

9.6 Follow up variables ADVOLU.DBF data base

1 Hospital or Clinic 0000000 - 9999999
Code number for the Hospital or Clinic
2 Chart number 0000000000 - 9999999999
Record Number of the Adolescent
3 Number of complaint 1 - 99
Number from 1 every time the adolescent
4 Date main complaint 01/01/92 - 31/12/13
Use dd/mm/yy format (12/01/95 for Jan 12
5 Age 10 - 24
Age of the Adolescent in years
6 Marital status 1 - 3
Marital Status of the Adolescent
1 single 2 stable link
3 separated
7 Accompanying person 1 - 8
Who came with the Adolescent to the visi
1 alone 2 mother
3 father 4 both
5 partner 6 friend
7 relative 8 others
8 Date last menstruat 01/01/92 - 31/12/13
1st day of Last Menstrual Period (if any
9 Weight 200 - 1200
Weight of Adolescent in hg (hectograms,
10 Height 1200 - 1990
Height of Adolescent in mm (1670 for 1.6
11 Systolic pressure 70 - 220
Systolic Pressure in mm Hg
12 Diastolic pressure 40 - 160
Diastolic Pressure in mm Hg
13 Heart rate 35 - 220
Heart Rate in beats/minute
14 Tanner breasts 0 - 5
Breasts Development according to Tanner
15 Tanner pubic hair 1 - 5
Pubic Hair stage according to Tanner
16 Tanner genitalia 0 - 5
Genitalia Development according to Tanne
17 Compl.accord.adol.1 A - Z
1st. Complaint according to Adolescent
18 Compl.accord.adol.2 A - Z
2nd Complaint according to Adolescent
19 Compl.accord.adol.3 A - Z
3rd Complaint according to Adolescent
20 Compl.accord.accom1 A - Z
1st Complaint according to Accompanying
21 Compl.accord.accom2 A - Z
2nd Complaint according to Accompanying
22 Compl.accord.accom3 A - Z
3rd Complaint according to Accompanying
23 General diagnosis A - Z
Integral Diagnosis of the Adolescent
24 Important observ. 1 A - Z
Important Obsvervations since last visit
25 Important observ. 2 A - Z
Important Obsvervations since last visit
26 Treatment A - Z.
Treatment and Auxiliary exams ordered
27 Cod.Health Provider 0000 - 9999
Code of the Health Provider
28 Studies 0 - 1
Is the Adolescent going to any School
0 no 1 yesy
29 Level 0 - 3
Level of Schooling at time of Visit
0 illiterate 1 elementary
2 high school/tech 3 university
30 Day of the week 1 - 7
Day of the week of this visit
1 Monday 2 Tuesday
3 Wednesday 4 Thursday
5 Fridays 6 Saturday
7 Sunday
31 Free 1 0000 - 9999
To be defined locally
32 Free 2 0000 - 9999
To be defined locally
33 Free 3 0000 - 9999
To be defined locally
34 Percentile of Weigh 1 - 99
Weight for the Age Percentile
35 Percentile of Heigh 1 - 99
Height for the Age Percentile
36 D.L.M. exists? 0 - 2
Does a Date of Last Menstruation exist?
0 exists 1 don't know
2 n/a
37 Date next visit 01/01/92 - 31/12/13
In dd/mm/yy format (12/01/95 for Jan 12,
38 Code accord.ado.(1) 0 - 999
Code of Complaint 1 accor. Adolescent
39 Code accord.ado.(2) 0 - 999
Code of Complaint 2 accor. Adolescent
40 Code accord.ado.(3) 0 - 999
Code of Complaint 3 accor. Adolescent
41 Code accor.accom(1) 0 - 999
Code of Complaint 1 accor. Accompanying
42 Code accor.accom(2) 0 - 999
Code of Complaint 2 accor. Accompanying

43	Code accor.accom(3) Code of Complaint 3 accor. Accompanying	0 - 999		Code of General Diagnosis 1	
44	Percentile W/Height Weight for Height Percentile	1 - 99	49	Code Diagnosis 2 Code of General Diagnosis 2	0 - 9999
45	Age tip in months Fraction of Age in Months	0 - 11	50	Code Diagnosis 3 Code of General Diagnosis 3	0 - 9999
46	Testicular rgt.vol. In cm.3 (0 for girls)	0 - 30	51	Code Treatment 1 Code 1 for Treatment and Exams	0 - 9999
47	Testicular lft.vol. In cm.3 (0 for girls)	0 - 30	52	Code Treatment 2 Code 2 for Treatment and Exams	0 - 9999
48	Code Diagnosis 1	0 - 9999	53	Code Treatment 3 Code 3 for Treatment and Exams	0 - 9999

9.7 Details of the design of the system

The Menu of the system contains all the normally used operations, including the procedure for copying and backing up the data. In the Menu of Infrequent Operations (Figure 20) the system allows access to delicate functions or those not commonly used. It may be necessary at times to update the index files. It is from this menu that an EPI-INFO file set can be obtained.

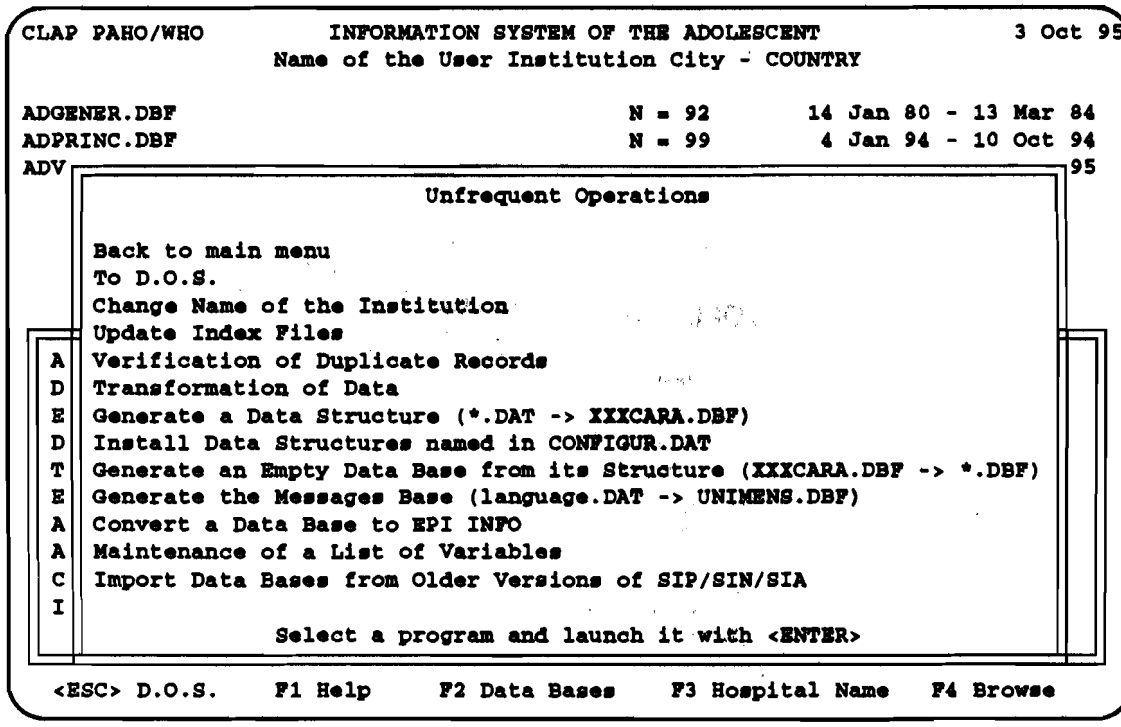


Figure 20. Screen displaying the menu of infrequent operations. Note that from here one can pass rapidly to the D.O.S., leaving SIA in memory, to run simple commands in the operating system like TYPE, DIR or PRINT

The programming of the system is independent of the language, since all the texts are in separate files. Even the names of the variables (VAR001, VAR002,etc.in the data base) have names that change according to the languge (AGE CHART, NUMBER, etc.)

The program is shaped according to the CONFIGUR.DAT file whose contents for the SIA are:

SIA
ENGLISH.DAT
LPT1
ADGENER.DBF
ADPRINC.DBF
ADVOLU.DBF
CENTRO.DAA

SIA defines the specific procedures of the Adolescent System, which is different from the SIP and the SIN which, respectively, deal with problems and collect perinatal and pediatric data.

ENGLISH.DAT defines the language of all the texts, screens, variables and documents. The other possible languages are ESPAÑOL.DAT and PORTUGUE.DAT.

LPT1 directs the printouts the operator wishes to print. In case of a local area network (LAN), the printing is done centrally by the common LPT2 printer, the parameter is specified here. For the parameter to enter into effect, the system will have to be restarted.

ADGENER.DBF, ADPRINC.DBF and ADVOLU.DBF are the structures of the data bases with which the system is going to work. In the case of SIA these three bases must be listed in this order to be able to obtain the documents on adolescence. Here, to enter data from one base only, or for special analyses, one can define just the base wanted. What is gained in speed of response of the programs is lost in possibilities of using the three bases simultaneously, according to the predefined printouts for the Adolescent Information System.

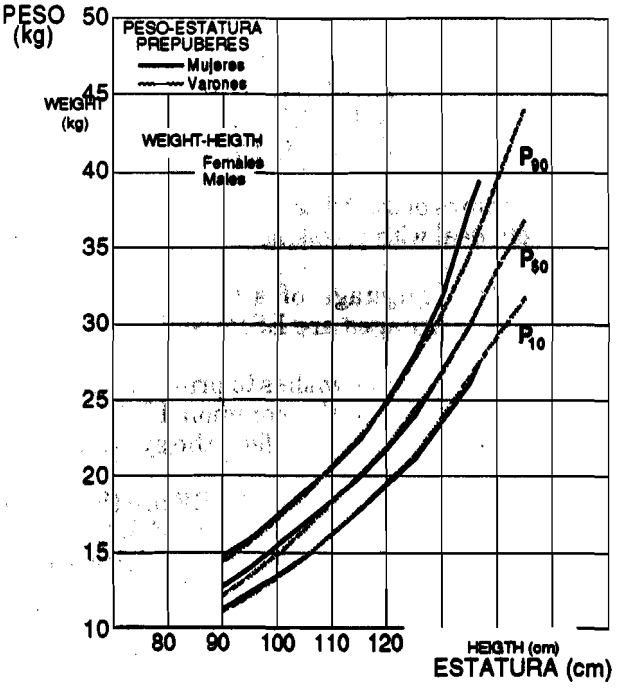
CENTRO.DAA contains the name of the institution that will head all the documents and screens. The Spanish and Portuguese versions use the CENTRO.DAT and CENTRO.DAD respectively.

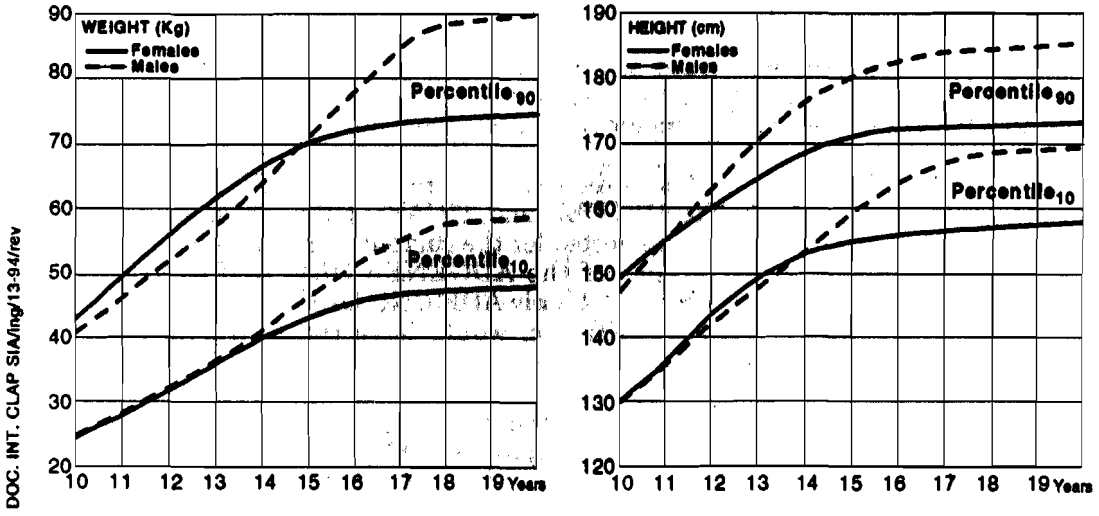
The programs of SIA was coded in CA-Clipper version 5.3. The diskette which goes distributed by CLAP contains all the necessary files, the data bases and the texts, in a compacted form. The files are automatically decompacted during the installation.

Among the files in the \SIA sub directory there are the following data bases: TICARA.DBF, TICARB.DBF, TICARC.DBF and TICARD.DBF. These contain all the characterisitics of all the data bases selected for the current running. In the cases of SIA these bases have the characterisics of the ADGENER.DBF, ADPRINC.DBF and ADVOLU.DBF variables in one list only. If only ADPRINC.DBF is defined as a working base, then TICARA.DBF, TICARB.DBF etc. would have the characteristics of the ADPRINC.DBF variables only.

The models of printouts are named for the specific programs that generate them (AD1070) and as an extension DAT for Spanish, DAA for English and DAD for Portuguese. Once they are filled with results, a file is generated under the same name but with a DOC extension, whatever the language.

9.8 Weight and Height Curves





DOC. INT. CLAP SIA/ing/13-94/rev

Graphs are from PAHO "Adolescent Medicine Manual" PALTEX series Nº 20, Washington, D.C., USA, 1992. Extended to 20 years of age.